

**Soil Survey  
Laboratory Data and  
Descriptions for  
Some Soils of...**

**...TENNESSEE**

**SOIL CONSERVATION SERVICE U.S. DEPARTMENT OF AGRICULTURE**  
In cooperation with  
**TENNESSE AGRICULTURAL EXPERIMENT STATION**

Soil Survey Investigations Report No. 15

**Soil Survey  
Laboratory Data and  
Descriptions for  
Some Soils of...**

**...TENNESSEE**

MAY 1967

**SOIL CONSERVATION SERVICE U.S. DEPARTMENT OF AGRICULTURE  
in cooperation with  
TENNESSEE AGRICULTURAL EXPERIMENT STATION**

- 1. SAMPLE COLLECTION AND PREPARATION**
- A. Field sampling
    - 1. Site selection
    - 2. Soil sampling
      - a. Stony soils
  - B. Laboratory preparation
    - 1. Standard (airdry)
      - a. Square-hole 2-mm sieve
      - b. Round-hole 2-mm sieve
    - 2. Field moist
    - 3. Carbonate-containing material
    - 4. Carbonate-indurated material
- 2. CONVENTIONS**
- A. Size-fraction base for reporting
    - 1. <2-mm
    - 2. size specified
  - B. Data-sheet symbols
    - tr: trace, not measurable by quantitative procedure used or less than reportable amount
    - tr(s): trace, detectable only by qualitative procedure more sensitive than quantitative procedure used analysis run but none detected
    - (a): none detected by sensitive qualitative test
    - blank: analysis not run
    - nd: analysis not run
    - <: less than reported amount or none present
- 3. PARTICLE-SIZE ANALYSES**
- A. <2-mm fraction (pipet method)
    - 1. Airdry samples
    - 2. Carbonate and noncarbonate clay
  - 2. Moist samples
    - a. Carbonate and noncarbonate clay
  - B. >2-mm fraction
    - 1. Weight estimates
    - 2. Volume estimates
- 4. FABRIC-RELATED ANALYSES**
- A. Bulk density
    - 1. Serum-coated clods
      - a. Field state
      - b. Airdry
      - c. 30-cm absorption
      - d. 1/3-bar desorption I
      - e. 1/3-bar desorption II
      - f. 1/3-bar desorption III
      - g. 1/10-bar desorption
      - h. Ovendry
    - 2. Paraffin-coated clods
      - a. Ovendry
    - 3. Cores
      - a. Field moist
    - 4. Bipolar-liquid-saturated clods
  - B. Water retention
    - 1. Pressure-plate extraction (1/3 or 1/10 bar)
      - a. Sieved samples
      - b. Soil pieces
      - c. Natural clods
      - d. Cores
    - 2. Pressure-membrane extraction (15 bars)
    - 3. Sand table absorption
    - 4. Field state
    - 5. Airdry
  - C. Water-retention difference
    - 1. 1/3 bar to 15 bars
    - 2. 1/10 bar to 15 bars
  - D. Coefficient of linear extensibility
    - 1. Dry-to moist
  - E. Micromorphology
    - 1. Thin sections
      - a. Preparation
      - b. Interpretation
    - c. Mavod-clay percentage
  - F. ION-EXCHANGE PROPERTIES
- A. Cation-exchange capacity
  - 1. NH<sub>4</sub>OAc, pH 7.0
    - a. Direct distillation
    - b. Displacement, distillation

**5A. CATION-EXCHANGE CAPACITY (CONT.)**

  - 2. NaOAc, pH 8.2
    - a. Centrifuge method
  - 3. Sum of cations
    - a. Acidity by BaCl<sub>2</sub>-TEA, pH 8.2; bases by NH<sub>4</sub>OAc, pH 7.0
  - 4. KOAc, pH 7.0
  - 5. BaCl<sub>2</sub>, pH 8.2
    - a. Barium by flame photometry
  - B. Extractable bases
    - 1. NH<sub>4</sub>OAc extraction
      - a. Uncorrected
      - b. Corrected (exchangeable)
    - 2. KCl-TEA extraction, pH 8.2
  - C. Base saturation
    - 1. NH<sub>4</sub>OAc, pH 7.0
    - 2. NaOAc, pH 8.2
    - 3. Sum of cations
  - D. Sodium saturation (exchangeable Na pct.)
    - 1. NaOAc, pH 8.2
    - 2. NH<sub>4</sub>OAc, pH 7.0
  - E. Sodium adsorption ratio

**6. CHEMICAL ANALYSES (CONT.)**

  - J. Sulfate
    - 1. Saturation extract
      - a. Acid titration
  - K. Chloride
    - 1. Saturation extract
      - a. Mohr titration
      - b. Potentiometric titration
  - L. Sulfite
    - 1. Saturation extract
      - a. Gravimetric, BaSO<sub>4</sub>
      - 2. NH<sub>4</sub>OAc extraction
        - a. Gravimetric, BaSO<sub>4</sub>  - M. Nitrate
    - 1. Saturation extract
      - a. FDS acid colorimetry
  - N. Calcium
    - 1. Saturation extract
      - a. EDTA titration
    - 2. NH<sub>4</sub>OAc extraction
      - a. EDTA-alcohol separation
      - b. Oxalate-permanganate I
      - c. Oxalate-permanganate II
      - Fe, Al, and Mn removed
      - d. Oxalate-cerate
    - 3. NH<sub>4</sub>Cl-EtOH extraction
      - a. EDTA titration
      - 4. KCl-TEA extraction
        - a. Oxalate-permanganate  - O. Magnesium
    - 1. Saturation extract
      - a. EDTA titration
    - 2. NH<sub>4</sub>OAc extraction
      - a. EDTA-alcohol separation
      - b. Phosphate titration
      - c. Gravimetric, Mg<sub>2</sub>P<sub>2</sub>O<sub>7</sub>
    - 3. NH<sub>4</sub>Cl-EtOH extraction
      - a. EDTA titration  - P. Sodium
    - 1. Saturation extract
      - a. Flame photometry
    - 2. NH<sub>4</sub>OAc extraction
      - a. Flame photometry  - Q. Potassium
    - 1. Saturation extract
      - a. Flame photometry
    - 2. NH<sub>4</sub>OAc extraction
      - a. Flame photometry  - R. Sulfur
    - 1. NaHCO<sub>3</sub> extraction, pH 8.5
      - a. Methylene blue
    - 3. Total phosphorus
      - 1. Perchloric-acid digestion
        - a. Molybdate-diphosphoric acid colorimetry

**7. MINERALOGY**

    - A. Instrumental analysis
      - 1. Preparation
        - a. Carbonate removal
        - b. Organic-matter removal
        - c. Iron removal
        - d. Particle-size fractionation
      - 2. X-ray diffraction
      - 3. Differential thermal analysis
    - B. Optical analysis
      - 1. Grain studies
    - C. Total analysis
      - 1. Chemical
      - 2. X-ray emission spectrography
    - D. Surface area
      - 1. Glycerol retention

**8. MISCELLANEOUS**

    - A. Saturated paste, mixed
      - 1. Saturation extract
        - a. Conductivity
        - 2. Conductivity, saturated paste
    - B. Saturated paste, capillary rise
      - 1. Saturation extract
        - a. Conductivity
    - C. pH
      - 1. Soil suspensions
        - a. Water dilution
        - b. Saturated paste
        - c. KCl
    - D. Ratios
      - 1. To total clay
      - 2. To noncarbonate clay
      - 3. Ca to Mg (extractable)

## PREFACE

This publication is one in a new U.S. Department of Agriculture series established to preserve and make available technical information resulting from soil survey investigations. These investigations have been going on for about two decades. Data from them have been distributed in unpublished form to those immediately concerned. Some of the data and descriptions have appeared in technical journals, in regional bulletins, in USDA technical bulletins, and in the text of published soil surveys. But most were not available to all who might use them.

We intend to publish in this series all data from the soil survey laboratories that form reasonably complete characterizations of soils. Already-assembled data and descriptions will be published just as rapidly as they can be prepared for printing. Fragmentary data collected as reference points for specific soil surveys will not be included.

While these data were being assembled, there were many changes in laboratory methods. Some were improved and some new ones were devised. Consequently, laboratory data for different soils cannot always be directly compared without allowance for the method.

The method used is indicated by symbol in the column headings of the data table. These symbols are identified in the code sheet on the opposite page. Each method is described in the first number of this series, "Soil Survey Laboratory Methods and Procedures for Collecting Soil Samples," SSIR No. 1.

Ways of describing soils have also changed. Soil descriptions have become explicit on more and more features. The systems for designating horizons and for classifying soils have been changed.

The soil descriptions published here were prepared as working documents to meet a specific need of a soil survey at the time the soil samples were collected. The soil scientists who wrote them had no idea they would be published. Editing has been limited for the most part to that necessary for conformance to the "Soil Survey Manual." Field textural estimates have been retained, even though some are at variance with the laboratory data, because the field estimates themselves are important data.

There were several reasons for sampling these soils. Some were sampled to study soil genesis, some to facilitate classification, and some to obtain data to permit more useful interpretations. Those sampled for genesis or classification studies do not always fit neatly into our present concepts of soil series. Partly because of these studies, our concepts of some soil series have been modified. As a consequence, the soil series name assigned a soil at the time of sampling is not always the name that would be assigned today. Soil series names in this publication follow 1965 series definitions.

Soil Survey  
Soil Conservation Service

## TENNESSEE

Soil Series	County	Soil Survey No.	Page	Soil Series	County	Soil Survey No.	Page	
Albertville	Putnam	S59Tenn-71-22	3	Freeland	Henderson	S57Tenn-39-12	123	
Blount	Blount	S53Tenn-5-16	5	Fullerton	Blount	S53Tenn-5-12	125	
Blount	Blount	S53Tenn-5-17	7	Greendale	Blount	S53Tenn-5-15	127	
Allen	Blount	S53Tenn-5-7	9	Grenada	Coffee	S54Tenn-16-5	129	
Blount	Blount	S53Tenn-5-8	11	Guthrie	Coffee	S54Tenn-16-15	131	
Armour	Coffee	S54Tenn-16-6	13	Guthrie	Fayette	S59Tenn-24-1	133	
Coffee	Coffee	S54Tenn-16-16	15	Guthrie	Fayette	S59Tenn-24-4	135	
Coffee	Coffee	S55Tenn-16-29	17	Huntington	Coffee	S54Tenn-16-19	137	
Coffee	Coffee	S55Tenn-16-30	19	Henry	Fayette	S54Tenn-16-20	139	
Baxter	Coffee	S54Tenn-16-2	21	Henry	Fayette	S59Tenn-24-6	141	
Coffee	Coffee	S54Tenn-16-13	23	Holston	Coffee	S54Tenn-16-11	145	
Beason	Hardin	S59Tenn-36-8	25	Holston	Coffee	S54Tenn-16-12	147	
Hardin	Hardin	S59Tenn-36-10	27	Huntington	Coffee	S54Tenn-16-17	149	
Bedine	Coffee	S54Tenn-16-7	29	Iuka	Putnam	S59Tenn-71-31	151	
Coffee	Coffee	S54Tenn-16-9	31	Jefferson	Fayette	S59Tenn-24-12	153	
Basket	Dyer	S61Tenn-23-12	33	Jefferson	Blount	S53Tenn-5-14	157	
Dyer	Dyer	S61Tenn-23-13	35	Jackson	Blount	S53Tenn-5-20	159	
Burton	Blount	S53Tenn-5-27	37	Landisburg	Loudon	S58Tenn-53-1	161	
Blount	Blount	S53Tenn-5-28	39	Lawrence	Coffee	S55Tenn-16-31	163	
Blount	Blount	S53Tenn-5-29	41	Leadvale	Blount	S55Tenn-16-32	167	
Calloway	Fayette	S59Tenn-24-2	43	Lexington	Henderson	S55Tenn-39-3	173	
Fayette	Fayette	S59Tenn-24-5	45	Linker	Henderson	S55Tenn-39-4	175	
Henderson	S55Tenn-39-1	47	Mimosa	Putnam	S59Tenn-71-24	177		
Henderson	S57Tenn-39-7	49	Minvale	Putnam	S59Tenn-71-25	179		
Collins	Fayette	S59Tenn-24-3	51	Monongahela	Putnam	S60Tenn-71-34	181	
Fayette	S59Tenn-24-8	53	Muskogee	Putnam	S60Tenn-71-35	183		
Fayette	S59Tenn-24-9	55	Paden	Blount	S53Tenn-5-19	185		
Fayette	S59Tenn-24-10	57	Pembroke	Blount	S53Tenn-5-25	187		
Fayette	S59Tenn-24-11	59	Pickwick	Putnam	S59Tenn-71-26	189		
Cumberland	Blount	S53Tenn-5-13	61	Sequatchie	Putnam	S59Tenn-71-27	191	
Blount	Blount	S53Tenn-5-18	63	Sequoia	Putnam	S59Tenn-71-28	193	
Coffee	S55Tenn-16-27	65	Silerton	Putnam	S59Tenn-71-29	195		
Coffee	S55Tenn-16-28	67	Talbott	Hardin	S59Tenn-36-2	197		
Dandridge	Blount	S53Tenn-5-5	69	Tellico	Hardin	S59Tenn-36-3	199	
Blount	Blount	S53Tenn-5-6	71	Tunica	Putnam	S59Tenn-71-30	201	
Decatur	Blount	S53Tenn-5-3	73	Waynesboro	Putnam	S59Tenn-71-33	211	
Blount	S53Tenn-5-4	75	Blount	Blount	S53Tenn-5-9	213		
Dekoven	Dyer	S61Tenn-23-8	77	Blount	Blount	S53Tenn-5-10	215	
Dyer	S61Tenn-23-9	79	Blount	Henderson	S55Tenn-39-2	217		
Dillrose	Coffee	S55Tenn-16-25	81	Blount	Henderson	S55Tenn-39-5	219	
Coffee	S55Tenn-16-26	83	Blount	Loudon	S58Tenn-53-2	221		
Dewey	Coffee	S54Tenn-16-3	85	Blount	Loudon	S58Tenn-53-5	223	
Coffee	S54Tenn-16-14	87	Blount	Loudon	S58Tenn-53-3	225		
Dickson	Coffee	S54Tenn-16-4	89	Blount	Loudon	S58Tenn-53-4	227	
Coffee	S54Tenn-16-10	91	Blount	Dyer	S61Tenn-23-10	229		
Dulac	Henderson	S57Tenn-39-9	93	Blount	Dyer	S61Tenn-23-11	231	
Henderson	S57Tenn-39-10	95	Blount	Loudon	S58Tenn-53-6	233		
Dummore	Blount	S53Tenn-5-1	97	Blount	Loudon	S58Tenn-53-9	235	
Blount	S53Tenn-5-2	99	Blount	Wellston	S59Tenn-71-23	237		
Egan	Hardin	S59Tenn-36-4	101	Blount	Wolftever	Hardin	S59Tenn-36-5	239
Hardin	S59Tenn-36-7	103	Blount	Wolfever	Hardin	S59Tenn-36-9	241	
Blount	Blount	S53Tenn-5-21	105					
Blount	Blount	S53Tenn-5-23	107					
Pearlmount	Loudon	S58Tenn-53-7	109					
Loudon	S58Tenn-53-8	111						
Palaya	Henderson	S57Tenn-39-8	113					
Henderson	S57Tenn-39-11	115						
Forestdale	Dyer	S61Tenn-23-14	117					
Dyer	S61Tenn-23-15	119						
Freeland	Henderson	S55Tenn-39-6	121					

## TENNESSEE

County	Soil Series	Soil Survey No.	Page	County	Soil Series	Soil Survey No.	Page
Blount	Alcoa	S53Tenn-5-16	5	Dyer	Tunica	S61Tenn-23-10	229
	Alcoa	S53Tenn-5-17	7		Tunica	S61Tenn-23-11	231
	Allen	S53Tenn-5-7	9	Fayette	Calloway	S59Tenn-24-2	43
	Allen	S53Tenn-5-8	11		Calloway	S59Tenn-24-5	45
	Burton	S53Tenn-5-27	37		Collins	S59Tenn-24-3	51
	Burton	S53Tenn-5-28	39		Collins	S59Tenn-24-8	53
	Burton	S53Tenn-5-29	41		Collins	S59Tenn-24-9	55
	Cumberland	S53Tenn-5-13	61		Collins	S59Tenn-24-10	57
	Cumberland	S53Tenn-5-18	63		Collins	S59Tenn-24-11	59
	Dandridge	S53Tenn-5-5	69		Grenada	S59Tenn-24-1	133
	Dandridge	S53Tenn-5-6	71		Grenada	S59Tenn-24-4	135
	Decatur	S53Tenn-5-3	73		Henry	S59Tenn-24-6	141
	Decatur	S53Tenn-5-4	75		Henry	S59Tenn-24-7	143
	Dunmore	S53Tenn-5-1	97		Iuka	S59Tenn-24-12	153
	Dunmore	S53Tenn-5-2	99	Hardin	Beason	S59Tenn-36-8	25
	Etowah	S53Tenn-5-21	105		Beason	S59Tenn-36-10	27
	Etowah	S53Tenn-5-23	107		Egam	S59Tenn-36-4	101
	Fullerton	S53Tenn-5-12	125		Egam	S59Tenn-36-7	103
	Fullerton	S53Tenn-5-15	127		Paden	S59Tenn-36-2	197
	Jefferson	S53Tenn-5-14	157		Paden	S59Tenn-36-3	199
	Jefferson	S53Tenn-5-20	159		Pickwick	S59Tenn-36-1	205
	Leadvale	S53Tenn-5-11	169		Pickwick	S59Tenn-36-6	207
	Leadvale	S53Tenn-5-24	171		Wolftever	S59Tenn-36-5	239
	Minvale	S53Tenn-5-19	185	Henderson	Wolftever	S59Tenn-36-9	281
	Minvale	S53Tenn-5-25	187		Calloway	S55Tenn-39-1	47
	Sequoia	S53Tenn-5-9	213		Calloway	S57Tenn-39-7	49
	Sequoia	S53Tenn-5-10	215		Dulac	S57Tenn-39-9	93
Coffee	Armour	S54Tenn-16-6	13		Dulac	S57Tenn-39-10	95
	Armour	S54Tenn-16-16	15		Falaya	S57Tenn-39-8	113
	Armour	S55Tenn-16-29	17		Falaya	S57Tenn-39-11	115
	Armour	S55Tenn-16-30	19		Freeland	S55Tenn-39-6	121
	Baxter	S54Tenn-16-2	21		Freeland	S57Tenn-39-12	123
	Baxter	S54Tenn-16-13	23		Lexington	S55Tenn-39-3	173
	Bodine	S54Tenn-16-7	29		Lexington	S55Tenn-39-4	175
	Bodine	S54Tenn-16-9	31		Silerton	S55Tenn-39-2	217
	Cumberland	S55Tenn-16-27	65	Loudon	Silerton	S55Tenn-39-5	219
	Cumberland	S55Tenn-16-28	67		Fairmount	S58Tenn-53-7	109
	Dellrose	S55Tenn-16-25	81		Fairmount	S58Tenn-53-8	111
	Dellrose	S55Tenn-16-26	83		Landisburg	S58Tenn-53-1	161
	Dewey	S54Tenn-16-3	85		Landisburg	S58Tenn-53-10	163
	Dewey	S54Tenn-16-14	87		Talbott	S58Tenn-53-2	221
	Dickson	S55Tenn-16-4	89		Talbott	S58Tenn-53-5	223
	Dickson	S55Tenn-16-10	91		Tellico	S58Tenn-53-3	225
	Greendale	S54Tenn-16-5	129		Tellico	S58Tenn-53-4	227
	Greendale	S54Tenn-16-15	131		Waynesboro	S58Tenn-53-6	233
	Guthrie	S54Tenn-16-19	137		Waynesboro	S58Tenn-53-9	235
	Guthrie	S54Tenn-16-20	139	Putnam	Albertville	S59Tenn-71-22	3
	Holston	S54Tenn-16-11	145		Huntington	S59Tenn-71-31	151
	Holston	S54Tenn-16-12	147		Huntington	S59Tenn-71-32	153
	Huntington	S54Tenn-16-17	149		Linker	S59Tenn-71-24	177
	Lawrence	S55Tenn-16-31	165		Linker	S59Tenn-71-25	179
	Lawrence	S55Tenn-16-32	167		Mimosa	S60Tenn-71-34	181
	Pembroke	S55Tenn-16-21	201		Mimosa	S60Tenn-71-35	183
	Pembroke	S55Tenn-16-22	203		Monongahela	S59Tenn-71-26	189
Dyer	Basket	S61Tenn-23-12	33		Monongahela	S59Tenn-71-27	191
	Basket	S61Tenn-23-13	35		Monongahela	S59Tenn-71-28	193
	Dekoven	S61Tenn-23-8	77		Maskingum	S59Tenn-71-29	195
	Dekoven	S61Tenn-23-9	79		Maskingum	S59Tenn-71-30	209
	Forrestdale	S61Tenn-23-14	117		Sequatchie	S59Tenn-71-33	211
	Forrestdale	S61Tenn-23-15	119		Sequatchie	S59Tenn-71-23	237
					Wellston	S59Tenn-71-23	

## SOIL SURVEY LABORATORY

Lincoln, Nebraska

LOCATION Putnam County, Tennessee

SOIL TYPE Albertville silt loam

LAB NOS. 12544 - 12550

SOIL NOS. 659 Tenn-71-22

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a		PARTICLE SIZE DISTRIBUTION (in. mm.)					3A1			TEXTURAL CLASS
			VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY <0.002	INTERNATIONAL		2A2	
			II	III	> 2 <10mm					II	III	> 2 <10mm	
12544	0-2	A1											Tr.
12545	2-7	A2	0.4a	0.4a	0.7	8.9	26.2	44.5	18.9	50.3	28.2		8
12546	7-12	B21	0.6a	0.4a	0.6	8.2	21.5	40.3	28.4	41.2	27.6		6
12547	12-23	B22	0.1a	0.2a	0.3	5.5	13.9	31.0	49.0	27.2	22.4		Tr.
12548	23-27	B3	<0.1	<0.1	0.1	1.8	4.7	29.1	64.3	9.8	25.5		c
12549	27-34	C1	0.3a	0.4a	0.1	0.7	1.9	43.3	53.3	9.6	36.2		sic
12550	34-48	C2	<0.1	<0.1	<0.1	0.1	1.9	62.0	36.0	20.7	43.3		sic1
			PE		OCla	ORGANIC MATTER				BULK DENSITY			WATER CONTENT
			8C1a		Free				Field State	30-Cm			
			H <sub>2</sub> O		Iron as	6A1a	6B1a		4B4	4A1a	0.D.	4B1b	4B2
			1:1		Fe <sub>2</sub> O <sub>3</sub>	ORGANIC CARBON	NITROGEN	C/N	Water	Water	4B3	4A1c	1/3- Bar
					%	%	%		%	g/cc	g/cc	g/cc	15-Bar %
12544	4.2			7.80									
12545	4.8		1.7	0.76	0.045	17	20.2	1.47	19.5	1.46	1.50	17.6	7.0
12546	4.8		2.7	0.39	0.038	10	20.1	1.55	19.0	1.56	1.62	19.4	11.0
12547	4.7		3.4	0.25	0.048	5	27.1	1.46	24.1	1.50	1.62	29.3	18.8
12548	4.5		4.2	0.32	0.061	5	33.2	1.37	31.1	1.39	1.58	32.4	24.4
12549	4.5		5.2	0.28			27.6	1.46b	25.3	1.49b	1.64b	28.7	22.4
12550	4.5		1.1	0.25			17.0	1.77	18.7	1.72	1.89	21.2	13.4
			5A1a		5C1a	EXTRACTABLE CATIONS	5C1a		5C3	5C1	5C1a	5A3a	
			CATION EXCHANGE CAPACITY	6N2b	6O2D	6P2a	6Q2E	6H1a	Base Sat. %	Base Sat. %	Sum Ext.	Sum Ext.	
			Na <sub>+</sub> K <sup>+</sup> Ca <sup>2+</sup> Mg <sup>2+</sup> NH <sub>4</sub> <sup>+</sup> OAc <sup>-</sup>	Ca	Mg	Na	K	H	on Sat Cations	NH <sub>4</sub> <sup>+</sup> OAc <sup>-</sup>	Base Cations me/100g		
					milliequivalents per 100g soil								
12544							27.5						
12545	6.1	<0.1	0.3	<0.1	0.1	8.8	4		6	0.4	9.2		
12546	8.5	<0.1	0.4	<0.1	0.2	11.2	5		7	0.6	11.8		
12547	15.9	<0.1	0.4	<0.1	0.3	13.9	5		4	0.7	14.6		
12548	20.6	<0.1	0.4	<0.1	0.3	26.0	3		3	0.7	26.7		
12549	18.3	<0.1	0.2	<0.1	0.3	23.7	2		3	0.5	24.2		
12550	12.0	1.6	0.3	0.1	0.3	14.8	13		19	2.3	17.1		

a. Many Fe-Mn? bearing aggregates.

b. Range is 0.12 to 0.16 g/cc.

Soil type: Albertville silt loam.

Soil No.: 599Tenn-71-22

Location: Putnam County, Tennessee, 1.6 miles east of Monterey on Dewey Goff property. Site is 30 feet east of corner of borrow pit. Photo AEW-3N-43.

Vegetation and Use: Mixed upland oak forest.

Slope and Land Form: Five percent slope, uneroded, upland.

Drainage and Permeability: Well drained; surface runoff is moderate to rapid, internal drainage is moderate.

Parent Material: Siltstone and shale from Pennsylvanian Rocks of the Cumberland Plateau.

Samples Collected by: Edwood Pederson, J. Fleming, G. T. Jackson, J. A. Elder, D. K. Springer, November 30, 1959.

Profile Described by: G. T. Jackson, November 30, 1959.

Horizon and

Lincoln

Lab. No. Depth

Ae      1 $\frac{1}{2}$  to 1      Undecomposed litter from oak and other deciduous trees.

Not      inch      sampled

Ae      1 to 0      Partly decomposed litter from deciduous trees; few twigs.

Not      inch      Apparently free from fire for many years. Somewhat laminated.

Not      0 to 2      sampled

Al      inches      Very dark grayish brown (10YR3/2) silt loam with weak fine granular structure; very friable; many fine roots; abrupt wavy boundary.

Ae      2 to 7      12545      inches      Yellowish brown (10YR5/4) silt loam with weak medium granular structure; friable; common fine-roots; clear wavy boundary.

B2I      7 to 12      12546      inches      Yellowish brown (10YR5/6) fine silt loam with moderate medium subangular blocky structure; discontinuous clay films on ped surfaces; friable when moist; small pores; clear wavy boundary.

B2II      12 to 23      12547      inches      Yellowish brown (10YR 5/6) silty clay loam with moderate medium subangular blocky structure; thin patchy clay films; friable; clear wavy boundary.

B3      23 to 27      12548      inches      Variegated strong brown (7.5YR5/6); light yellowish brown (2.5YR6/4); and yellowish red (5YR5/6) silty clay; variegations are common, medium, prominent; strong medium and coarse angular blocky structure; thin clay films; firm; gradual smooth boundary.

C1      27 to 34      12549      inches      Variegated yellowish red (5YR5/6), strong brown (7.5YR5/6), pink (5YR7/3) silty clay; variegations are many, coarse, prominent; platy structure apparently formed from weathered shale bedding planes; few shale fragments.

Q2      3 $\frac{1}{2}$  to 48      12550      inches      Variegated strong brown (7.5YR5/6) and yellowish red (5YR5/6) silty clay with gray (10YR6/1) clay films; platy structure plus apparently formed from weathered shale; common shale fragments.

Remarks: Color and consistency are for moist soil.



Soil Type: Alico silt loam

Soil No.: 553755-5-16

Location: Blount County, Tennessee. 2 miles northwest of Chandler.

Vegetation and land use: Hay. Johnson grass and lespediza.

Horizon and  
Belleville  
Lab. No.

A2 0 to 13 inches. Dark reddish brown (5YR 3/3) very friable silt loam.  
53755

B21 13 to 44 inches. Reddish brown (5YR 4/4) friable clay loam; weak fine blocky structure.  
53756 Numerous black specks and stains, and a few black concretions.

B22 44 to 60 inches. Yellowish red (5YR 4/6) friable clay loam; weak fine blocky structure.  
53757 Numerous black specks or stains. Occasional black concretion.

**grn Alcoa silt loam**

Call No. 853 Tenn-5-17 covering Blount County, Tennessee

**SOIL SURVEY LABORATORY Beltsville, Maryland**

LAB. Nos. 53758-53760

Soil Type: Alcoa silt loam

Soil No.: 853Tenn-5-27

Location: Blount County, Tennessee. 2 miles west of Simmle.

Vegetation and land use: Idle. Lepedesa and weeds.

Horizon and

Beltsville

Lab. No.

Ap 0 to 9 inches. Reddish brown (5YR 4/4) very friable silt loam or loam.  
53758

B21 9 to 15 inches. Reddish brown (5YR 4/4) very friable clay loam; weak fine blocky structure.  
53759

B22 15 to 50 inches. Yellowish red (5YR 4/6) very friable clay loam; weak fine blocky structure.  
53760  
Few black specks or stains.

90-421  
1000

**U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE**

**9011 Allen fine sandy loam**

SOIL No. 8537mm-5-7

LOCATION Blount County, Tennessee

~~SOC SURVEY LABORATORY~~ Beltsville, Maryland

148 Neg. 53718-53724

Soil Type: Allen fine sandy loam

Soil No.: 853Tenn-5-7

Location: Blount County, Tennessee, 1/4 mile east of Walland.

Vegetation and use: Unimproved pasture on idle with numerous briars, scrub oaks and some volunteer

soil Allen fine sandy loam

SOIL Nos. S53Tenn-5-8 LOCATION Blount County, Tennessee

**SOIL SURVEY LABORATORY** Beltsville, Maryland

LAB. Nos. 53723-53727

Soil Type: Allen fine sandy loam

Soil No.: 553726-9-8

Location: Blount County, Tennessee. 4 miles east of Walland.

Vegetation and land use: Unimproved pasture or idle with broomsedge and sprouts.

Horizon and  
Beltville  
Lab. No.

Ap 0 to 7 inches. Pale brown (10YR 6/3) nonplastic fine sandy loam.  
53723

A3 7 to 12 inches. Strong brown (7.5YR 5/8) nonplastic sandy clay loam; weakly developed fine  
53724 blocky structure. Gradual gradation to;

B1 12 to 17 inches. Yellowish red (5YR 5/8) slightly plastic clay with a few distinct streakings  
53725 of strong brown (7.5YR 5/8). Moderately developed medium blocky structure. Gradual gradation  
to;

B2 17 to 41 inches. Red (2.5YR 4/6) moderately plastic clay loam; moderately developed medium  
53726 blocky structure.

C 41 to 60 inches. Red (2.5YR 4/8) moderately plastic clay loam with a few distinct brownish  
53727 yellow (10YR 6/6) mottles; moderately developed medium blocky structure.

Note: Colors refer to moist soil.

SOIL Armour silt loam,  
eroded undulating phase SOIL Nos. 854Tenn-16-6 LOCATION Coffee County, Tennessee  
SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551314-551317

Depth (in.)	Horizon	161b Size class and particle diameter (mm) 3A1															
		Total			Sand				Silt				3B2				
		Sand (2-0.05) —	Silt (0.05- 0.002) —	Clay (< 0.002) —	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Int. III 0.05-0.02	Int. II (0.02- 0.002)	Int. I (0.02- 0.1)	Cm	2A2 ≥ 2 Pct.	2-19 Pct. of <= 76mm	19-76 Pct. of <= 76mm	
0-9	AP	68.0	21.7	2.2	2.8	1.4	1.6	2.3	45.9	25.2				5 tr. tr.			
9-15	B1	66.1	26.8	1.2	1.9	1.1	1.2	1.7	48.2	20.2							
15-32	B2	63.5	28.2	1.8	2.2	1.1	1.2	2.0	45.5	20.5							
42+	C	52.7	34.1	3.9	3.4	1.5	1.7	2.7	38.6	17.7				13			
Depth (in.)	GAIa- Organic carbon	Nitrogen Pct.	C/N Pct.	Carbonate as CaCO <sub>3</sub> Pct.	Ext. Iron as Fe2O3 Pct.	Bulk density			4D1 COLE	Water content			4C1 WRD in/in	pH			
						4Aie ½ bar	4Ah Oven dry			4B1c ½ bar	4B2 15 bar			8C1c (1:1)	8C1a (1:1)		
						g/cc	g/cc	g/cc		Pct.	Pct.	Pct.		KCl	H <sub>2</sub> O		
0-9	1.04	0.118	9			2.6										5.5	
9-15	0.42	0.072	6			2.4										5.7	
15-32	0.34	0.069				2.9										5.8	
42+	0.10	0.070				3.9										5.5	
Depth (in.)	Extractable bases 5B1a					6H1a Ext. acidity	CEC		6G1d Ext. Al	Ratios to clay			8D3 Ca/Mg	Base saturation			
	6N2d Ca	6O2b Mg	6P2a Na	6Q2s K	Sum meg/100 g		5A3a Sum cations			CEC Sum	Ext. iron	15-bar water		5C3 Sum cations Pct.	5C1 NH <sub>4</sub> OAc Pct.		
	3.8	0.8	tr.	0.2			9.2	14.0									
0-9	4.9	0.4	tr.	0.2			6.8	12.3								34	
9-15	5.7	0.4	0.1	0.2			6.3	12.7								45	
15-32																50	
42+	5.1	0.8	0.1	0.2			6.6	12.8								48	
Depth (in.)	Clay Fraction Analysis 7A1b-d																
	Mt.	Chl.	Vm.	Mt.	Int.	Qtz.	Kl.	Gibbsite									
									7A2 X-ray								
									7A3								

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, Mt. = mica,  
Int. = interstratified layer, Qtz. = quartz, Kl. = kaolinite

Relative amounts: blank = not determined, dash = not detected,  
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Armour silt loam, eroded undulating phase.

Soil No.: S54Tenn-16-6

Location: Coffee County, Tennessee. 300 feet northwest of Stepp's Store at road and 250 feet north of U. S. Highway 41. Aerial photo 5G-77.

Slope and land form: 4 percent.

Horizon and  
Beltsville  
Lab. No.

Ap 0 to 9 inches. Dark brown (10YR 3/3) very friable silt loam; weak fine crumb structure.  
551314

B1 9 to 15 inches. Dark brown (7.5YR 4/4 to 10YR 4/3) friable silt loam; moderate medium crumb to weak fine subangular blocky structure; a few finely divided chert fragments and small black accretions usually present.  
551315

B2 15 to 32 inches. Strong brown (7.5YR 5/6) to reddish brown (5YR 4/4) friable silty clay loam; weak fine to medium subangular blocky structure; a few finely divided chert fragments and small black accretions present.  
551316

B3 32 to 42 inches. Strong brown (7.5YR 5/6) friable silty clay loam; weak to moderate medium subangular blocky structure; chert fragments and black accretions becoming more numerous than in layers above.  
Not Sampled

C 42 inches plus. Yellowish brown (10YR 5/4) and strong brown (7.5YR 5/6); friable silty clay loam; slightly heavier textured than above layer; moderate medium subangular blocky structure; chert fragments and black accretions become larger and more numerous.  
551317

SOIL Armour silt loam  
eroded undulating phase  
SOIL SURVEY LABORATORY Beltsville, Maryland

SOIL SUR. 551353-16-16 LOCATION Coffee County, Tennessee

LAB. Nos. 551353 - 551356

Depth (in.)	Horizon	181b										Size class and particle diameter (mm) 3A1		3B2	Coarser fragments 3B1		
		Total			Sand			Silt			Int. III (0.05-0.02) (0.02-0.002)	Int. II (0.2-0.02) (2-0.1)	Cm	2A2 ≥ 2 2-19 19-76 Pct. of < 76mm			
		Sand (2-0.05) (0.05- 0.002)	Silt (< 0.002)	Clay (0.002- 0.0002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25) (0.25-0.1)	Fine (0.1-0.05)	Very fine (0.05-0.02) (0.02- 0.002)	Pct. of < 2 mm				Pct.	Pct.	Pct.	
0-9	Ap	63.2	20.8	5.3	4.6	1.9	2.0	2.2	44.0	22.3					22		
9-14	B1	50.5	30.0	9.5	4.5	1.7	1.7	2.1	36.9	16.5					18		
14-32	B2	47.1	38.0	4.9	3.9	1.7	1.7	2.7	34.0	16.7					13		
40+	C	42.0	35.9	7.0	5.8	2.6	2.8	3.9	31.2	16.2					36		
Depth (in.)	6A1a Organic carbon	NITROGEN	C/N	Carbonate as CaCO <sub>3</sub>	Ext. iron as Fe2O3	Pct.	401 4Ah by bar	4Ah Oven dry	401 COLE	bulk density			Water content		4C1	pH	
										#81c	#82					8C1c	8C1a
										1g bar	15 bar					(1:1)	(1:1)
0-9	2.46	0.216	11			2.9										6.5	
9-14	0.29	0.072				5.0										5.3	
14-32	0.20	0.089				4.9										5.1	
40+	0.15	0.075				5.1										5.0	
Depth (in.)	Extractable bases 5B1a					6CH1a Ext. acidity	CEC		6G1d Est. Al	Ratio to clay			8D3 Ca/Mg	Base saturation			
	6N2a Ca	6O2b Mg	6P2a Na	6Q2a K	Sum		5A3g Sum cation			CEC Sum	Ext. iron	15-bar water		5C3 Sum cation Pct.	5C1 NH <sub>4</sub> OAc Pct.		
0-9	10.9	2.0	tr.	0.5		6.0	19.4							69			
9-14	5.4	0.4	0.2	0.2		7.9	14.1							44			
14-32	5.9	1.8	0.1	0.2		8.4	16.4							49			
40+	4.6	1.7	0.2	0.2		9.2	15.9							42			
Depth (in.)	Clay Fraction Analysis 7A1b-d																
	Mt.	Cm.	Vn.	Mi.	Int.	Qtz.	Kl.	Illite		7A2	7A3	7A4					
										X-10							
0-9	x	x	xxx	x			x										
9-14																	
14-32																	
40+																	

Mt. = Montmorillonite, Cm. = chlorite, Vn. = Vermiculite, Mi. = mica,  
Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative abundance: blank = not determined, dash = not detected,  
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant

Soil Type: Amherst silt loam, eroded undulating phase.

Soil No.: 551353-16-36

Location: Coffee County, Tennessee. 3.1 miles west of Noah near county line. 200 yards west of Noah Fork Creek. 50 feet east of fence corner and 25 feet north of gravel road. Aerial photo 5G-50.

Horizon and  
Belt/valley:  
Lab No.

- Ay 551353 0 to 9 inches. Dark brown (10YR 3/3) very friable silt loam; weak fine crumb structure; a few finely divided chert fragments.
- B1 551354 9 to 14 inches. Brown (10YR 4/3) to reddish brown (5YR 4/4) friable silt loam or silty clay loam; moderate medium crumb to weak fine subangular blocky structure; a few finely divided chert fragments.
- B2 551355 14 to 32 inches. Strong brown (7.5YR 5/6) to reddish brown (5YR 4/4) friable silty clay loam; weak fine to medium subangular blocky structure; a few finely divided chert fragments and black accretions.
- B3 Not Sampled 34 to 40 inches. Strong brown (7.5YR 5/6) friable silty clay loam; weak to moderate medium subangular structure; contains slightly more chert and accretions than layer above.
- C 551356 40 inches plus. Mottled strong brown (7.5YR 5/6-5/8) moderately cherty friable silty clay loam; moderately medium subangular blocky; numerous black accretions.

S08. Armour silt loam,  
eroded undulating phase SOIL Nos. 55Tenn-16-29 LOCATION Coffee County, Tennessee

**SOIL SURVEY LABORATORY** Beltsville, Maryland

LAB. Nos. 552001 - 552006

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite

**Relative amounts:** blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Armour silt loam, eroded undulating phase.

Soil No.: S55Tenn-16-69

Location: Coffee County, Tennessee. 1.35 miles west on Hornady Road, which begins at the I-40 Parka

From 0.2 mile south of bridge over Duck River, to fence corner on the west side of road at a sharp curve. 250 yards west of fence corner and 50 yards north of intersection of small drainageways at fence. Aerial photo 50-44.

Vegetation and land-use: Fallow

Slope and land form: 3 to 4 percent

Physiographic position: Stream terrace

Horizon and  
Beltville  
Lab. No.

Ap 552001	0 to 7 inches. Brown (10YR 4/3) friable silt loam; weak fine granular structure; many small grass and weed roots; common wormholes 2.0 mm in diameter.
B1 552002	7 to 17 inches. Brown (7.5YR 4/4) to dark yellowish brown (10YR 4/4) friable to firm silty clay loam; moderate medium subangular blocky structure; contains a few soft black segregations, apparently manganese; 1.0 mm in diameter; few distinct clay skins on ped; contains a few fine pinholes.
B21 552003	17 to 24 inches. Brown (7.5YR 4/4) exterior, yellowish brown (10YR 5/4) interior or when crushed; firm heavy silty clay loam; moderate medium subangular and angular blocky structure; contains a few light yellowish brown (10YR 6/4) variegations; prominent clay skins on ped; common dark reddish brown stains, probably ferro-manganese, and black concretions 1.0 mm in diameter.
B22 552004	24 to 34 inches. Yellowish brown (10YR 5/4) firm heavy silty clay (plastic when wet); moderate fine angular blocky structure; common fine faint light yellowish brown (10YR 6/4) and few fine distinct yellowish red (5YR 4/6) variegations; prominent strong brown (7.5YR 5/6) clay skins on ped; contains many fine black ferro-manganese segregations and stains and a few dark reddish
B3 552005	34 to 44 inches. Strong brown to brown (7.5YR 5/6-4/4) with common fine distinct pale brown (10YR 6/3) variegations; firm silty clay loam; weak medium angular blocky structure; common clay skins on ped; pale brown and gray silt material has accumulated in a few old root channels or wormholes; common manganese segregations 1.0 to 5.0 mm in diameter; a few fine chert gravel 3.0 to 7.0 mm in diameter.
C 552006	44 to 50 inches. Strong brown (7.5YR 5/6) firm cherty silty clay loam; common fine distinct light yellowish brown and pale brown (10YR 6/4-6/3) and few fine faint brown (7.5YR 4/4) variegations; common soft black manganese segregations 1.0 to 5.0 mm in diameter; contains a very few clay skins; many chert fragments 1/2 to 3 inches in diameter; larger chert gravel comprising an estimated 15 percent of total volume discarded from sample.

SOIL Armour silt loam,  
eroded undulating phase  
SOIL SURVEY LABORATORY, Beltsville, Maryland

SOIL Nos. 855Tenn-16-30LOCATION Coffee County, TennesseeLAB. Nos. 552007 552012

Depth (in.)	Horizon	1B1b										3B2 Cm	Coarse fragments - 4H Pct. of Pct. => 76mm		
		Total			Sand				Silt						
		Sand (2-0.05)	Silt (0.05- < 0.002)	Clay (< 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Pct. of << 2 mm	Int. III (0.05-0.02 (0.02- (0.002)	Int. II (0.02- (0.002)	3B2 Cm		
0-7	Ap	63.1	23.3	1.4	2.2	1.6	3.3	5.1		43.6	26.6		5		
7-15	B1	59.9	27.3	1.3	2.1	1.4	2.8	5.2		42.1	24.8		4		
15-26	B21	58.7	27.9	1.4	2.0	1.3	3.0	5.5		40.7	25.4		tr.		
26-39	B22	53.8	34.6	0.7	1.7	1.6	2.6	5.4		38.9	22.0		tr.		
39-45	B3	47.6	38.6	1.5	2.4	1.4	2.8	5.7		34.3	20.8		11		
45-57	C or Du	27.2	39.6	14.5	11.2	2.9	2.1	2.5		20.9	9.9		50		
Depth (in.)	Organic carbon	Nitrogen	C/N	Carbonate as CaCO <sub>3</sub>	Ext. iron as Fe2O3	Dust density			4B1 COLE	Water content			4C1 WRD	pH	
						4B1 as water	4A1h Oven dry	g/cc		4B1c 15 bar	4B2 15 bar	in/in		8C1c (1:1)	8C1a (1:1)
	Pct.	Pct.	Pct.	Pct.	Pct.					Pct.	Pct.			KCl	H <sub>2</sub> O
0-7	1.34	0.100	13			2.1								5.7	
7-15	0.19	0.061				2.4								5.5	
15-26	0.08	0.060				2.5								5.5	
26-39	0.10	0.064				3.0								5.1	
39-45	0.10	0.068				3.5								4.9	
45-57	0.12	0.074				4.2								4.5	
Depth (in.)	Extractable bases 5B1a					6G1a Ext. acidity	CEC Sum cation <sup>+</sup>	6G1d Ext. Al	Ratios to clay			6D3 Ce/Mg	Base saturation		
	6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum				CEC Sum	Ext. iron	.15-bar water		5C3 Sum cation <sup>+</sup> Pct.	5C1 NH <sub>4</sub> OAc Pct.	
	meq/100 g														
0-7	5.1	0.6	0.1	0.1		7.0	12.9						46		
7-15	5.4	0.2	tr.	0.2		5.1	10.9						53		
15-26	4.4	0.8	0.1	0.2		4.7	10.2						54		
26-39	4.1	1.1	0.1	0.2		5.9	11.4						48		
39-45	3.3	0.9	0.1	0.3		8.4	13.0						35		
45-57	2.4	0.8	0.1	0.4		9.3	13.0						28		
Depth (in.)	Clay Fraction Analysis 7A1b-d														
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite							
	7A2 X-ray														

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, Mi. = mica,  
Int. = interstratified layer, Qtz. = quartz, Kl. = kaolinite

Relative amounts: blank = not determined, dash = not detected,  
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Armour silt loam, eroded undulating phase.

Soil No.: 555Tenn-16-30

Location: Coffee County, Tennessee. 0.15 miles south of bridge over Duck River at Riverside on road to

Vegetation and land use: Cultivated.

Slope and land form: 3 percent.

Physiographic position: Stream terrace

Horizon and

Beltsville

Lab. No.

A1 0 to 7 inches. Brown to dark brown (10YR 4/3-3/2) friable silt loam; weak fine granular

552007	structure; many small roots and common wormholes.
B1 552008	7 to 15 inches. Brown (7.5YR 4/4) to dark yellowish brown (10YR 4/4) friable to firm light silty clay loam; moderate fine to medium subangular blocky structure; contains a few black segregations; apparently manganese, 1.0 mm in diameter; a few distinct clay skins on pedes; occasional small chert fragment 2.0 to 5.0 mm in diameter; a few pinholes present.
B2 552009	15 to 26 inches. Brown (7.5YR 4/4) exterior, yellowish brown (10YR 5/6) interior or when crushed; firm silty clay loam; moderate medium angular and subangular blocky structure; prominent clay skins on horizontal and vertical faces; contains a few soft black concretions 1.0 mm in diameter and small chert gravel 2.0 to 5.0 mm in diameter.
B2 552010	26 to 39 inches. Strong brown (7.5YR 5/6) with common fine distinct light yellowish brown (10YR 6/4) and yellowish red (5YR 4/6) variegations; firm silty clay loam; moderate to strong medium angular blocky structure; plastic when wet; continuous prominent clay skins on pedes; common soft black concretions and segregations 1.0 to 2.0 mm in diameter; a few small chert gravel.
B3 552011	39 to 45 inches. Strong brown (7.5YR 5/6) with many medium distinct pale brown, yellowish brown (10YR 6/3-5/4) and yellowish red (5YR 5/6) variegations; firm silty clay loam (plastic when wet); moderate medium angular blocky structure; many prominent clay skins on vertical faces but few distinct clay skins on horizontal faces; a few chert gravel present 1/4 to 2 inches in diameter; smooth abrupt lower boundary.
C or D 552012	45 to 57 inches. Strong brown (7.5YR 5/6) with many fine distinct light yellowish brown (10YR 6/4) and yellowish red (5YR 5/6) variegations; firm chartey silty clay loam; weak fine to

you Barber cherky silt loam.

Soil No. 861000-16-2 Location [redacted] Maryland

SOIL SURVEY LABORATORY Beltsville, Maryland

LAB. Nos. 551299 - 551302

Depth (in.)	Horizon	1B1b											Size class and particle diameter (mm) 3A1			3B2 Cm	Coarse fragments 3B1		
		Total			Sand				Silt				Int. II (0.2-0.02) (0.02-0.002)	Int. III (0.05-0.02) (0.02-0.002)	Int. I (0.2-0.02) (0.02-0.002)		2A2 Pct. ≥ 2	2-19 Pct. of < 76mm	
		Sand (2-0.05)	Silt (0.05- 0.002)	Clay (≤ 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Int. III (0.05-0.02) (0.02-0.002)	Int. II (0.2-0.02) (0.02-0.002)	Int. I (0.2-0.02) (0.02-0.002)							
		Pct. of ≤ 2 mm																	
0-7	A <sub>p</sub>	67.1	15.1	4.2	3.0	2.2	4.6	3.8		49.0	24.5					34			
7-10	B <sub>1</sub>	53.8	20.9	5.0	4.5	3.1	6.3	6.4		35.2	28.7					9			
10-32	B <sub>2</sub>	51.0	32.3	2.2	3.7	2.6	4.1	4.1		37.1	20.3					3			
32+	C	38.4	56.3	0.6	1.0	0.7	1.3	1.7		30.4	10.4					5			
Depth (in.)	BA1s Organic carbon	Nitrogen Pct.	C/N	Pct.	Carbonate as CaCO <sub>3</sub> Pct.	Ext. iron B.B Fe2O3 Pct.	Bulk density			401 COLE	Water content			4C1 WRD in/in	pH				
							481a g/bar	441h g/bar	g/cc		481c % bar	482 15 bar	Pct.		8C1c (1:1)	8C1a (1:1)			
							g/bar	g/bar	g/cc		Pct.	Pct.	Pct.		KCl	H <sub>2</sub> O			
							0-7	1.55	0.151	12	1.4								
7-10		0.20	0.055				2.2								6.6				
10-32		0.09	0.053				2.8								5.7				
32+		0.04	0.050				5.1								4.7				
															5.0				
Depth (in.)	Extractable bases 5B1e					GEC Ext. acidity Sum cation sum	GEC		SD3 Ext. Al	Ratio to clay			SD3 Ca/Mg	Base saturation					
	6N2d Ca	602b Mg	6P2e Na	6Q2a K	Sum		CEC Sum	Ext. iron	15-bar water	CEC Sum	Ext. iron	15-bar water	5C3 Sum cation Pct.	5C1 NH <sub>4</sub> OAc Pct.					
							meq/100 g												
0-7	7.4	0.8	tr.	0.4		3.4	12.0								72				
7-10	3.6	0.4	tr.	0.1		2.4	6.5								63				
10-32	2.9	1.2	0.1	0.1		5.6	9.9								43				
32+	6.3	2.6	0.1	0.3		8.0	17.3								54				
Depth (in.)	Clay Fraction Analysis 7A1b-d											[Redacted]							
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gneiss				[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	
	7A2	X-ray																	

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, Mi. = mica,  
Int. = interstratified layer, Qtz. = quartz, Kl. = KiehliteRelative amounts: blank = not determined, dash = not detected,  
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Baxter cherty silt loam, eroded rolling phase.

Soil No.: S54Tena-16-2

Location: Coffee County, Tennessee. 6.5 miles north of Hillsboro on Hillsboro-Viola Road to a gravel road.  
100 feet southwest of gravel road and 50 feet west of Hillsboro-Viola road. Aerial photo 7G-80.

Vegetation and land use: Pasture

Slope and land form: 8 to 9 percent.

Horizon and

Beltville

Lab. No.

A<sub>p</sub> 0 to 7 inches. Brown (10YR 4/3-5/3) very friable cherty silt loam; weak fine crumb structure; chert fragments ranging from 1/2 to 4 inches in diameter.

B<sub>1</sub> 7 to 10 inches. Reddish yellow (7.5YR 6/6 - 5YR 6/8) friable cherty silt loam; weak fine sub-angular blocky structure.

B<sub>2</sub> 10 to 32 inches. Yellowish red (5YR 5/8) and reddish yellow (7.5YR 7/6) firm cherty silty clay loam or silty clay; moderate fine to medium subangular and angular blocky structure.

C 32 inches plus. Yellowish red (5YR 5/8) or red (2.5YR 4/6) spattered and streaked with yellow; firm cherty silty clay; moderate medium to coarse angular blocky structure.

304. Baxter cherty silt loam  
eroded rolling phase

SCHL No. 854-Benn-16-13 LOCATION Coffee County, Tennessee

**SOIL SURVEY LABORATORY** Beltsville, Maryland

LAB. Nos. 551343 - 551346

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mica = mica, Int. = interstratified layer, Qtz. = quartz, KI. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil No.: 854Tenn-16-13

Location: Coffee County, Tennessee. 0.6 mile north of Pleasant Knoll Church and 0.2 mile south of county line near large pond. 40 yards west of road at gate and 30 yards south of pond. Aerial photo 7G-44.

Horizon and  
Beltsville  
Lab. No.

- Ap 551343 0 to 7 inches. Brown (10YR 4/3 - 5/3) very friable cherty silt loam; weak fine crumb structure; chert fragments ranging from 1/2 to 4 inches in diameter.
- B1 551344 7 to 10 inches. Reddish yellow (7.5YR 6/6 - 5YR 6/8) friable cherty silt loam; weak fine sub-angular blocky structure.
- B2 551345 10 to 32 inches. Yellowish red (5YR 5/8) and reddish yellow (7.5YR 7/6) firm cherty silty clay loam or silty clay; moderate fine to medium subangular and angular blocky structure.
- C 551346 32 inches plus. Yellowish red (5YR 5/8) or red (2.5YR 4/6) splotched and streaked with yellow; firm cherty silty clay; moderate medium to coarse angular blocky structure.

**SOIL SURVEY LABORATORY**  
Lincoln, Nebraska

LOCATION Hardin County, Tennessee

SOIL TYPE Season silt loam

LAB NOS. 12368 - 12374

SOIL NOS. S59 Tenn-36-8

LABORATORY NUMBER	DEPTH INCHES	HORIZON	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)						3A1			TEXTURAL CLASS		
			1Bla	VERY COARSE SAND 2-1	COARSE SAND 0.5-0.25	MEDIUM SAND 0.25-0.10	FINE SAND 0.10-0.05	VERY FINE SAND 0.05-0.002	SILT	CLAY	INTERNATIONAL	2A2		
			II	III	> 2									
12368	0-10	Ap	0.4a	1.1a	0.5a	1.4a	2.7b	67.8	25.8	25.5	45.7	-	sil	
12369	10-19	B1g	0.7a	2.7a	1.9a	2.6a	3.2b	55.3	33.6	23.2	36.5	Tr.	sicl	
12370	19-26	B2g	0.2a	1.5a	1.3a	2.7a	7.7b	50.5	36.1	30.0	29.8	-	sicl	
12371	26-39	B3mlg	0.2a	0.7a	0.7a	2.6a	13.0b	47.9	34.9	35.3	27.4	-	sicl	
12372	39-48	B3m2g	0.1a	0.6a	0.6a	2.4a	4.3b	55.7	36.1	26.6	34.8	-	sicl	
12373	48-60	B3m3g	<0.1	<0.1	0.1a	1.2c	3.8	54.2	40.7	24.7	34.1	-	sicl	
12374	60-71+	C	<0.1	0.1	0.6	5.3	8.0	50.2	35.8	31.1	30.5	-	sicl	
			ORGANIC MATTER				6Cla	BULK DENSITY					4B2	
			8Cla H <sub>2</sub> O 1:1	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Free Iron as Fe <sub>2</sub> O <sub>3</sub> %	Field 4B4	State 4Ala	30-Cm. 4B3	4Alc	O.D. 4Alh	15-Bar Water %	
12368	5.9			1.43	0.125	11	2.9	20.6	1.56	23.7	1.54	1.62	11.6	
12369	5.0			0.40	0.054	7	3.9	22.2	1.50	24.1	1.50	1.56	14.9	
12370	5.0			0.39	0.051	8	3.4	20.8	1.59	21.8	1.58	1.66	15.5	
12371	4.9			0.32	0.32		2.7	19.9	1.61	21.4	1.60	1.67	14.9	
12372	4.9			0.27	0.27		3.2	18.2	1.67	21.1	1.63	1.70	15.0	
12373	4.9			0.28	0.28		3.1	19.9	1.67	21.7	1.63	1.71	17.2	
12374	4.9			0.20	0.20		3.0	18.3	1.70	21.2	1.65	1.74	14.7	
			5A1a CATION EXCHANGE CAPACITY NH <sub>4</sub> OAc	EXTRACTABLE CATIONS				5Bla Base Sat.% NH <sub>4</sub> OAc	5C1 Base Sat.% NH <sub>4</sub> OAc	5C3 Sum Ext. Cations Cations me/100g	5B1a Sum Ext. Cations Cations me/100g	5A3a Sum Ext. Cations Cations me/100g	8D3 Ca/Mg	
			6N2b Ca	6O2b Mg	6H1a Na	6P2a K	6O2a H	milliequivalents per 100g soil						
12368	15.4	9.9	1.1	<0.1	0.2	10.3	73	52	11.2	21.5	9.0			
12369	16.1	5.6	1.2	0.1	0.2	16.5	44	30	7.1	23.6	4.7			
12370	17.4	5.0	1.7	0.1	0.2	17.8	40	28	7.0	24.8	2.9			
12371	16.7	4.3	1.8	0.1	0.2	15.5	38	29	6.4	21.9	2.4			
12372	15.9	4.0	1.7	0.2	0.2	16.2	38	27	6.1	22.3	2.4			
12373	16.5	4.2	1.7	0.2	0.2	15.8	38	28	6.3	22.1	2.5			
12374	13.8	3.6	1.6	0.2	0.2	13.5	40	29	5.6	19.1	2.2			

- a. Many Fe-Mn? bearing aggregates.
- b. Few Fe-Mn? bearing aggregates.
- c. Common Fe-Mn? bearing aggregates.

Soil type: Mason silt loam

Soil No.: 859 Tenn-36-8

Location: Hardin County, Tennessee, 65 miles southwest of Savannah on Pittsburg Ferry road; 1/4 mile east of Tennessee River, on J. Hughes farm.  
Photo: AIK-78-96, (1955)

Vegetation and Use: Wheat stubble, Johnson grass and ragweed; cultivated land.

Slope and Land Form: Level (0 to 1 percent) Tennessee River terrace land; slight concave. Elevation 386 feet.

Drainage and Permeability: Somewhat poorly drained; slow runoff; slow permeability.

Parent Material: Old alluvium from sediments chiefly of limestone origin.

Samples collected by: C. B. Brainerd, Edwood Pedersen, George Phibbs, W. H. Proffitt,  
Bobbie Winston, R. T. Lammier, E. C. Sasse, and T. W. Lowe. October 22, 1955.

**SOIL SURVEY LABORATORY**  
Lincoln, Nebraska

LOCATION Hardin County, Tennessee

SOIL TYPE Benton silt loam

LAB NOS. 12631 - 12637

SOIL NOS. S59Tepn-36-10

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a						PARTICLE SIZE DISTRIBUTION (in mm.)			(per cent) 3A1			TEXTURAL CLASS
			VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	II 0.2-0.02	III 0.02-0.002	2A2 > 2			
			0-7	Ap	0.2a	0.4a	0.3a	0.7a	1.8b	70.2	26.4	19.7	52.7	-	sil
12631	0-7	Ap	0.2a	0.4a	0.3a	0.7a	1.8b	70.2	26.4	19.7	52.7	-	-	-	sil
12632	7-18	B1g	0.7a	1.8a	1.0a	1.8a	3.3c	56.1	35.3	21.1	39.3	-	-	-	sicl
12633	18-28	B2g	1.1a	1.6a	0.9a	1.9a	3.5d	52.3	38.7	18.2	38.7	-	-	-	sicl
12634	28-37	B3m1g	1.0a	1.9a	1.0a	1.9a	3.4c	49.9	40.9	18.8	35.6	-	-	-	sic
12635	37-46	B3m2g	1.7a	2.1a	1.0a	2.0c	3.8c	48.6	40.8	17.0	36.6	-	-	-	sic
12636	46-63	B3m3g	0.4a	1.2a	1.0a	2.4c	5.6b	52.0	37.4	23.6	35.4	-	-	-	sic
12637	63-86	C	<0.1	0.2d	0.3d	4.7	16.0	48.0	30.8	40.8	27.0	-	-	-	cl
pH			ORGANIC MATTER			6C1a			BULK DENSITY			4B2			
	8C1a $H_2O$ 1:1			6A1a ORGANIC CARBON %	6A1b NITROGEN %	C/N	Ironas Fe <sub>2</sub> O <sub>3</sub> %	Free Water %	Field State	30-cm.	0.D. 4Alh	4Alh 15-Bar Water			
12631	5.7			1.18	0.111	11	3.2	24.1	1.36	27.3	1.36	1.44	1.44	12.0	
12632	4.9			0.40	0.060	7	4.3	23.3	1.49	25.5	1.48	1.56	1.56	15.7	
12633	5.0			0.44	0.065	7	4.3	24.6	1.44	25.8	1.43	1.54	1.54	16.8	
12634	5.0			0.24			3.9	23.8	1.47	25.4	1.46	1.57	1.57	16.9	
12635	4.9			0.17			4.2	22.8	1.54	24.0	1.53	1.60	1.60	16.6	
12636	4.9			0.13			3.8	20.5	1.65	22.3	1.61	1.68	1.68	15.9	
12637	4.9			0.13			3.2	18.2	1.66	21.5	1.62	1.70	1.70	13.8	
5A1a			EXTRACTABLE CATIONS			5B1a			5C1			5A3a			
	5A1a CATION EXCHANGE CAPACITY $NH_4OAc$		6N2b Ca	6O2b Mg	6H1a H	6P2a Na	5P2a K	Base Sat. %	5C1 NH <sub>4</sub> OAc on Sum Cations me/100g	5B1a Base Sum Ext. Bases Cations me/100g	5A3a Ca/Mg				
12631	14.0	9.3	1.0	9.6	<0.1	0.2	75	52	10.5	20.1	9.3				
12632	17.2	4.7	1.1	16.7	<0.1	0.2	35	26	6.0	22.7	4.3				
12633	18.8	6.3	1.7	15.2	0.1	0.2	44	35	8.3	23.5	3.7				
12634	19.7	5.1	1.6	16.5	0.1	0.2	36	30	7.0	23.5	3.2				
12635	18.5	3.0	1.5	17.4	0.1	0.2	26	22	4.8	22.2	2.0				
12636	16.0	1.8	1.4	18.2	0.1	0.2	22	16	3.5	21.7	1.3				
12637	14.4	2.3	2.3	13.1	0.3	0.2	35	28	5.1	18.2	1.0				

a. Many Fe-Mn? bearing aggregates.  
b. Few Fe-Mn? bearing aggregates.

c. Common Fe-Mn? bearing aggregates.  
d. Few Fe-Mn? bearing aggregates. Few mica fragments.

Soil type: Beeson silt loam

Soil No.: S59Tenn-36-10

Location: Hardin County, Tennessee, 3 miles northwest of Savannah on Coffee Landing Road, 100 yards west of road. Photo AIK-6F-166(1955)

Vegetation and Use: Cultivated - corn.

Slope and Land Form: Nearly level (0-1 percent) Tennessee River terrace.  
Elevation 377 feet.

Drainage and Permeability: Somewhat poorly drained; slow runoff; slow permeability.

Parent Material: Old alluvium from sediments of limestone origin.

Samples collected by: C. B. Breining, T. R. Love, W. H. Proffitt, E. T. Lampley,  
Betty Hinton, E. C. Sease.

Profile described by: W. H. Proffitt, and E. C. Sease.

Horizons and  
Lincoln

Lab. No. Depth

Ap 12631 0 to 7 inches Dark grayish brown (10YR 4/2) silt loam; weak fine crumb structure; very friable; common fine roots; few small concretions; clear wavy boundary. 6 to 12 inches thick.

Hg 12632 7 to 18 inches Brown (10YR 5/3) silty clay loam; few fine faint mottles of yellowish brown (10YR 5/4) and grayish brown (10YR 5/2); weak fine subangular blocky structure; firm to friable few patchy clay films; few small roots; common small pores; few fine brown and black concretions and segregations; clear wavy boundary. 9 to 11 inches thick.

Hg 12633 18 to 28 inches Mottled brown (10YR 5/3); yellowish brown (10YR 5/4); grayish brown (10YR 5/2); and strong brown (7.5YR 5/6); silty clay; mottles are many medium faint, weak fine subangular and angular blocky to vesicular; firm; patchy clay films; many voids or pores; few small brown and black hard concretions; clear wavy boundary. 7 to 11 inches thick.

Mottled brown (10YR 5/3); yellowish brown (10YR 5/4-5/6); and

551-421  
10-60 (Rev. 9-68)

U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

Soil: Baldridge sandy loam, steep phase SOIL Nos. 551Tenn-16-7 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland

LAB. Nos. 551318 - 551320

Depth (in.)	Horizon	Size class and particle diameter (mm) SAI										382 Cm	Coarse fragments SFH			
		Total			Sand				Silt				Int. II (0.2-0.02 (0.02- 0.002))	(2-0.1)	Pct. of < 2 mm	
		Sand (2-0.05 (0.05- 0.002))	Silt (> 0.002)	Clay (= 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Int. III (0.05-0.02 (0.02- 0.002))						
1-9	A2	60.5	13.4	4.8	3.4	1.8	3.1	5.0	48.8	26.4						
9-20	C1	60.9	11.2	8.6	6.1	2.6	4.4	6.2	42.8	26.8			33			
20-50+	C2	50.6	29.3	5.4	4.3	1.9	3.5	5.0	36.9	20.7			58			
													47			
Depth (in.)	Organic carbon	Nitrogen	C/N	Carbonate as CaCO <sub>3</sub>	Ext. Iron as Fe2O3	Bulk density			401 COLE	Water content			4C1 WRD	pH		
						4A1e 1/2 bar	4A1h Oven dry			4B1c 1/2 bar	4B2 15 bar			8Clc (1:1)	8Clc (1:1)	
	Pct.	Pct.		Pct.	Pct.	g/cc	g/cc	g/cc		Pct.	Pct.	Pct.		KCl	H <sub>2</sub> O	
1-9	1.57	0.060	17			1.0									5.0	
9-20	0.31	0.087				1.0								4.8		
20-50+	0.35	0.075				2.6								4.6		
Depth (in.)	Exchangeable bases SAIa				6G1a Ext. acidity	CEC		6G1d Ext Al	Ratios to clay			803 Ca/Mg	Base saturation			
	Mm	Mm	Mm	Mm		SAsa Sum cation			CEC Sum	Ext. iron	15-bar water		5C3 Sum cation Pct.	'5C1 NH <sub>4</sub> OAc Pct.		
	Ca	Mg	Na	K												
Clay Fraction Analysis 7A1b-d																
Depth (in.)	M.L. Chl. Vm. Ml. Int. Qtz. Kl. Gibbsite							7A2	7A3							

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, ml = mica,  
Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected,  
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Bodine cherty silt loam, steep phase.

Soil No.: S54Tenn-16-7

Location: Coffee County, Tennessee. 3.9 miles west of Rutledge Falls Church on gravel road to curve at second house past Woodland Church of Christ. 150 feet north of road at curve and 50 feet south of where two small drainageways intersect. Aerial photo 5G-87.

Vegetation and land use: Hardwood forest consisting chiefly of white oaks, hickory, and red oaks.  
Slope and land form: 25 percent slope.

Horizon and  
Beltsville  
Lab. No.

O1, O2 1 to 0 inches. Leaf mold, partly decayed organic matter and forest litter.  
Not Sampled

A1 0 to 1 inch. Dark grayish brown or grayish brown (10YR 4/2 - 5/2) very friable cherty silt  
Not Sampled loam; weak fine or medium granular structure.

A2 1 to 9 inches. Light yellowish brown or pale brown (10YR 6/4 - 6/3) very friable cherty silt  
551318 loam; moderate medium crumb structure.

C1 9 to 20 inches. Yellowish brown to brownish yellow (10YR 5/6 - 6/6) very cherty friable silt  
551319 loam or silty clay loam; weak fine to medium angular blocky structure; coarse angular chert  
fragments comprise 50 percent or more of the soil mass.

C2 20 to 60 inches plus. Chert beds of coarse angular fragments intersilted with mottled reddish  
551320 yellow, yellowish red, yellow, brown, and gray silty clay or silty clay loam material.

SOIL Bodine cherty silt loam, steep phase SOIL Nos. S54Tenn-16-9 LOCATION Coffee County, Tennessee

**SOIL SURVEY LABORATORY** Beltsville, Maryland **LAB Nos.** **551327 - 551329**

Mt. = Montmorillonite, Chi. = chlorite, Vm. = Vermiculite, mi = mica, Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite

**Relative amounts:** blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Bodine cherty silt loam, steep phase.

Soil No.: 554Rnn-16-9

Location: Coffee County, Tennessee. 2.8 miles south on Friendship-Mountview road (which is the first road to the south after sawmill 0.25 mile west of Blanton's Chapel). 120 yards south of T. A. Wiser's house to a power pole on west side of road and 70 feet east of road at power pole. Aerial photo 50-108.

Vegetation and land use: Mixed hardwood forest.

Slope and land form: 20 to 25 percent.

Morison and  
Belleville  
Lab. No.

O1, O2 1 to 0 inches. Leaf mold, partly decayed organic matter and forest litter.  
Not Sampled

A1 0 to 1 inch. Dark grayish brown or grayish brown (10YR 4/2 - 5/2) very friable cherty silt  
Not Sampled loam; weak fine or medium granular structure.

A2 1 to 9 inches. Light yellowish brown or pale brown (10YR 6/4 - 6/3) very friable cherty silt  
551327 loam; moderate medium crumb structure.

CL 9 to 20 inches. Yellowish brown to brownish yellow (10YR 5/6 - 6/6) very cherty friable silt  
551328 loam; silty clay loam; weak fine to medium angular blocky structure; coarse angular chert  
fragments comprise 50 percent or more of the soil mass.

O2 20 to 60 inches plus. Chert beds of coarse angular fragments intersilted with mottled reddish  
551329 yellow, yellowish red, yellow brown, and gray silty clay or silty clay loam material.

## OIL SURVEY LABORATORY Lincoln, Nebr.

October 1963

**SOIL TYPE** Basket  
silt loam

**LOCATION** Dyer County, Tennessee

**SOIL NOS.**

861Tenn-23-12

LAB NOS 16454-16499

DEPTH INCHES	HORIZON	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)							3A1	2A2	TEXTURAL CLASS
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY			
		2.1	1.0.5	0.8-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002	> 2
0-6	A <sub>d</sub>	-	0.3a	0.4a	2.9	17.8	64.9	13.7	70.3	14.5	-
6-14	B <sub>21</sub>	-	Tr.	Tr.	1.5	21.3	53.2	24.0	60.6	15.3	-
14-24	B <sub>22</sub>	-	-	Tr.	0.9	16.4	59.8	22.9	59.9	17.1	-
24-34	B <sub>3</sub>	-	-	Tr.b	0.4a	6.7a	74.1	18.8	59.1	22.1	-
34-40	C <sub>1</sub>	-	-	Tr.b	0.1b	1.1a	8.6	70.5	56.9	23.1	-
40-50	C <sub>2</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
50-60	C <sub>3</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
60-70	C <sub>4</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
70-80	C <sub>5</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
80-90	C <sub>6</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
90-100	C <sub>7</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
100-110	C <sub>8</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
110-120	C <sub>9</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
120-130	C <sub>10</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
130-140	C <sub>11</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
140-150	C <sub>12</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
150-160	C <sub>13</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
160-170	C <sub>14</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
170-180	C <sub>15</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
180-190	C <sub>16</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
190-200	C <sub>17</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
200-210	C <sub>18</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
210-220	C <sub>19</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
220-230	C <sub>20</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
230-240	C <sub>21</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
240-250	C <sub>22</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
250-260	C <sub>23</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
260-270	C <sub>24</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
270-280	C <sub>25</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
280-290	C <sub>26</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
290-300	C <sub>27</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
300-310	C <sub>28</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
310-320	C <sub>29</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
320-330	C <sub>30</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
330-340	C <sub>31</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
340-350	C <sub>32</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
350-360	C <sub>33</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
360-370	C <sub>34</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
370-380	C <sub>35</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
380-390	C <sub>36</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
390-400	C <sub>37</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
400-410	C <sub>38</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
410-420	C <sub>39</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
420-430	C <sub>40</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
430-440	C <sub>41</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
440-450	C <sub>42</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
450-460	C <sub>43</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
460-470	C <sub>44</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
470-480	C <sub>45</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
480-490	C <sub>46</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
490-500	C <sub>47</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
500-510	C <sub>48</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
510-520	C <sub>49</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
520-530	C <sub>50</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
530-540	C <sub>51</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
540-550	C <sub>52</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
550-560	C <sub>53</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
560-570	C <sub>54</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
570-580	C <sub>55</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
580-590	C <sub>56</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
590-600	C <sub>57</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
600-610	C <sub>58</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
610-620	C <sub>59</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
620-630	C <sub>60</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
630-640	C <sub>61</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
640-650	C <sub>62</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
650-660	C <sub>63</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
660-670	C <sub>64</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
670-680	C <sub>65</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
680-690	C <sub>66</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
690-700	C <sub>67</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
700-710	C <sub>68</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
710-720	C <sub>69</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
720-730	C <sub>70</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
730-740	C <sub>71</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
740-750	C <sub>72</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
750-760	C <sub>73</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
760-770	C <sub>74</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
770-780	C <sub>75</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
780-790	C <sub>76</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
790-800	C <sub>77</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
800-810	C <sub>78</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
810-820	C <sub>79</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
820-830	C <sub>80</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
830-840	C <sub>81</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
840-850	C <sub>82</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
850-860	C <sub>83</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
860-870	C <sub>84</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
870-880	C <sub>85</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
880-890	C <sub>86</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
890-900	C <sub>87</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
900-910	C <sub>88</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
910-920	C <sub>89</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
920-930	C <sub>90</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
930-940	C <sub>91</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
940-950	C <sub>92</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
950-960	C <sub>93</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
960-970	C <sub>94</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
970-980	C <sub>95</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
980-990	C <sub>96</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
990-1000	C <sub>97</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
1000-1010	C <sub>98</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
1010-1020	C <sub>99</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
1020-1030	C <sub>100</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
1030-1040	C <sub>101</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
1040-1050	C <sub>102</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
1050-1060	C <sub>103</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
1060-1070	C <sub>104</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
1070-1080	C <sub>105</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
1080-1090	C <sub>106</sub>	-	-	0.1b	5.3	21.4	58.4	14.8	66.5	18.0	-
1090-1100	C <sub>107</sub>	-									

Soil type: Bogotet silt loam  
 Soil No.: 8617ann-23-12

Location: Ivey County, Tennessee; from Bogota 1.2 miles west to gravel road - on gravel road 1.7 miles south to junction - on gravel road east 150 feet, then south 0.2 mile to another gravel road - on gravel road east 0.4 mile - north of gravel road 300 feet to sample site. Aerial photo ADN-2R-164.

Vegetation and use: Recently combined soybeans.

Slope and land form: Nearly level, about 2 percent, old natural levee of Mississippi River.

Drainage and permeability: Well drained with slow runoff and medium internal drainage; permeability is moderate.

Parent material: Alluvium from Mississippi River.

Collected by: E. J. Anderson, John L. Millet, J. A. Elder, E. C. Sease, W. C. Moffitt, C. L. Moore, and W. C. Jackson.

Described by: W. T. Brown, October 18, 1961.

Horizon and  
 Lincoln  
 Lab. Number

Ap 16458	0 to 6 inches. Brown (10YR 4/3) silt loam; weak fine granular structure; very friable; firm, massive plow pan in lower one inch; many fine roots; abrupt smooth boundary.
B21 16455	6 to 14 inches. Brown (10YR 4/3) silty clay loam with ped surfaces of dark brown (7.5YR 4/4); weak coarse prismatic structure breaking to moderate medium subangular blocky structure; friable; few fine roots; few fine pores; few wormholes; gradual smooth boundary.
B22 16456	14 to 24 inches. Brown (10YR 4/3) silt loam with ped surfaces of dark brown (7.5YR 4/4); weak coarse prismatic structure breaking to moderate medium subangular blocky structure; friable; few fine roots; few fine pores; few wormholes; clear smooth boundary.
B3 16457	24 to 34 inches. Brown (10YR 4/3) silt loam with ped coatings of dark brown (7.5YR 4/4); weak coarse prismatic structure breaking to weak medium angular blocky structure; friable; common fine pores; clear smooth boundary.
C1 16458	34 to 40 inches. Brown (10YR 4/3) silt loam; weak coarse prismatic structure; friable; few fine pores; clear smooth boundary.
C2 16459	40 to 50 inches. Dark brown (7.5YR 4/4) silt loam; massive; very friable; few fine pores; few old worm channels; abrupt smooth boundary.
D1L	50 to 53 inches. Brown (10YR 4/3) loamy sand; massive; very friable; abrupt smooth boundary.
Du2	53 to 63 inches. Brown (10YR 4/3) silt loam; contains thin strata of silty clay loam with common fine grayish brown (10YR 5/2) mottles; massive; friable; common fine pores; clear smooth boundary.
Du3	63 to 68 inches. Yellowish brown (10YR 5/4) silty clay loam with common medium grayish brown (10YR 5/2) strong brown (7.5YR 5/6) mottles; massive; friable; few fine pores.

Remarks: Ap, B22, and C2 were sampled for the Bureau of Public Roads. Colors and Munsell notations are for moist soil; soil was dry when sampled. All samples were fumigated with methyl bromide for 24 hours.

**SOIL SURVEY LABORATORY Lincoln, Nebr.**

October 1963

*Concord - Brookline*

**International Direct Distribution Management**

**SOIL NOS.**

861Temp-23-13

**LAB. NOS. 1640-1666**

		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent.)									
DEPTH INCHES.	HORIZON	VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY			TEXTURAL CLASS
1.1		1.0-2	0.4-2.5	0.22-0.10	0.10-0.05	0.05-0.02	0.002	0.002	0.002	0.002	2M2

Soil type: Boxbet silt loam

Soil Nos.: 861Tenn-23-13

Location: Dyer County Tennessee; from Bogota 1.2 miles west of gravel road - on gravel road 0.5 mile south to another gravel road - on gravel road 0.5 mile east to bend in road - along fence row 400 feet to sample site which is 30 feet south of fence row and about 400 feet north of a gravel road. Aerial photo ADN-2R-126.

Vegetation and use: Recently combined soybeans.

Slope and land form: Nearly level, about 2 percent, old natural levee of Mississippi River.

Drainage and permeability: Well drained with slow runoff and medium internal drainage; permeability is moderate.

Parent material: Alluvium from Mississippi River.

Collected by: E. J. Pedersen, J. L. Millet, J. A. Elder, E. C. Sease, W. C. Moffitt, C. L. Moore, and W. C. Jackson.

Described by: W. T. Brown, October 18, 1961.

Horizon and

Lincoln

Lab. Number

Ap 16460 0 to 7 inches. Dark grayish brown (10YR 4/2) silt loam; weak fine granular structure, with massive firm plow pan in lower 2 inches; friable; few fine roots; abrupt smooth boundary.

B1 16461 7 to 12 inches. Yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; few fine roots; few fine pores and root holes; clear smooth boundary.

B2 16462 12 to 18 inches. Dark brown (7.5YR 4/4) silty clay loam; weak medium prismatic structure breaking to moderate medium angular and subangular blocky structure; friable; common fine roots; common fine pores; gradual smooth boundary.

B2 16463 18 to 25 inches. Dark brown (7.5YR 4/4) silty clay loam or silt loam; weak medium prismatic structure breaking to moderate medium angular and subangular blocky structure; friable; common fine roots; common fine pores; clear smooth boundary.

B3 16464 25 to 30 inches. Dark brown (7.5YR 4/4) silt loam; weak medium prismatic structure breaking to weak medium angular and subangular blocky structure; friable; few fine roots; few fine pores; gradual smooth boundary.

C 16465 30 to 40 inches. Brown (10YR 4/3) fine sandy loam; massive; friable; clear smooth boundary.

D 16466 40 to 52 inches. Brown (10YR 4/3) loamy fine sand; massive; very friable; clear smooth boundary.

Du2 52 to 80 inches. Brown (10YR 5/3) fine sand; single grain; loose; strata of 1/2-inch wide brown (10YR 4/3) loamy fine sand are present.

Remarks: Ap, B22, and D were sampled for the Bureau of Public Roads. Colors and Munsell notations given are for moist soil; soil was dry when sampled. All samples were fumigated with methyl bromide for 24 hours.

SOIL Burton loam      SOIL Nos. 853Tenn-5-27      LOCATION Blount County, Tennessee

**SOIL SURVEY LABORATORY** Beltsville, Maryland

SOIL Nos. SS3Tenn-5-27 LOCATION Blount County, Tennessee

LAB. Nos. 53368-53370

April 1965

Soil Type: Burton loam  
Profile No.: S53Tenn-5-27  
Location: Blount County, Tennessee

Horizon and  
Beltsville  
Lab. No.

- A1 53368 0 to 6 inches. Very dark brown (10YR 2/2) moderate medium crumb very friable loam. Lower boundary irregular, plus or minus 2 inches. Many fine grass roots in upper 3 inches. pH 4.50.
- B1 53369 6 to 10 inches. Very dark grayish brown (10YR 3/2) heavy loam with some inclusions from A1. Weak fine subangular blocky structure. Contains a few very small pieces of charcoal in places. Graywacke parent rocks extend into this layer and are weathering within the horizon. pH 5.35.
- B2 53370 10 to 19 inches plus. Olive brown (2.5Y 4/4) smooth heavy silt loam or light silty clay loam with weak medium subangular blocky structure. Contains many large size Graywacke rocks, some partly weathered. pH 5.10.

Notes: This soil is well drained and contains a large percent of coarse skeleton. It occupies a knoll area with grass vegetation, chiefly mountain oat grass. Formerly grazed. Colors are for moist soil unless indicated otherwise.

SOIL Burton loam SOIL Nos. 853Tenn-5-28 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland

LAB. Nos. 53371-53376

April 1965

Soil Type: Burton loam  
Profile No.: 53376-5-28  
Location: Blount County, Tennessee

Horizon and  
Beltville  
Lab. No.

- A1 0 to 2 inches. Very dark brown (10YR 2/2) very porous moderate fine crumb very friable loam with many fine grass roots. pH 4.30.  
53371
- A3 2 to 5 inches. Very dark grayish brown (10YR 3/2) smooth weak to moderate fine to medium crumb very friable loam. 2-inch transition. pH 4.50.  
53372
- B1 5 to 9 inches. Brown (7.5YR 4/4) weak fine to medium subangular blocky heavy friable loam or light silty clay loam. Contains numerous small unweathered black shale or slate fragments and a few greenish spots of weathered Graywacke rock. pH 5.15.  
53373
- B2 9 to 14 inches. Brown (7.5YR 4/4) weak medium subangular blocky friable silty clay loam containing numerous small unweathered black shale or slate fragments. pH 5.10.  
53374
- B3 14 to 72 inches. Dominantly brown (10YR 4/3) friable more or less structureless silt loam. Contains a large amount of fine black shale or slate fragments and a few larger fragments of partly weathered Graywacke rock. pH 5.35.  
53375
- C 72 inches plus. Brown to reddish brown (7.5YR 4/4 - 5YR 4/4) friable loam parent material. Contains many small black shale fragments and larger reddish or greenish weathered Graywacke rocks with their original structure. pH 5.25.  
53376

Notes: Colors are for moist soil unless indicated otherwise.

SOIL Burton loam

SOIL NO. 853 Team-5-29 LOCATION Benton County, Tennessee

**SOIL SURVEY LABORATORY** Beltsville, Maryland

LAB. Nos. 53377-53381

April 1965

Soil Type: Burton loam  
Profile No.: 853Tenn-5-29  
Location: Blount County, Tennessee

Horizon and  
Beltsville  
Lab. No.

- A1 0 to 8 inches. Black to very dark brown (10YR 2/1-2/2) very friable moderate medium and coarse granular loam. Many fibrous grass roots in upper 3 inches impart a fine granular structure to that portion. pH 4.60.
- A3 8 to 13 inches. Dark brown (7.5YR 3/2) weak medium blocky heavy friable loam. Grades through one or two inches of B1 into next horizon. pH 5.10.
- B2 13 to 21 inches. Brown (10YR 4/3) weak medium subangular blocky smooth friable light silty clay loam. Gradual transition to B3. pH 5.45.
- B3 21 to 32 inches. Brown (10YR 4/3) weak medium crumb friable heavy loam to light silty clay loam with a few dark brown pencil lines along small root channels. pH 5.40.
- C 32 inches plus. Grayish brown to brown (10YR 5/2-5/3) friable loam with slight olive cast containing a few fragments of black shale or slate. pH 5.25.

Notes: Colors are for moist soil unless indicated otherwise.

**SOIL SURVEY LABORATORY**  
Lincoln, Nebraska

LOCATION Fayette County, Tennessee

SOIL TYPE Calloway silt loam,  
terrace phase

Lincoln Lab Nos. 12202 - 12208

SOIL NOS. 359Tenn-24-2

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1Bla. PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)						3A1			TEXTURAL CLASS
			VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE- SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	INTERNATIONAL	2A2	
12202	0-6	Ap	0.5a	1.4b	1.9a	2.3a	0.8a	73.7	19.4	36.5	38.6	- sil
12203	6-11	B2	0.2a	1.0b	0.8a	1.2a	0.6a	72.0	24.2	32.5	40.5	- sil
12204	11-15	B3mg1	1.0a	1.6a	0.9a	1.2b	0.7b	77.9	16.7	35.7	43.3	- sil
12205	15-29	B3mg2	0.4a	0.9a	0.7b	0.9b	0.7b	73.8	22.6	35.8	39.0	- sil
12206	29-39	B3mg3	<0.1	0.4a	0.5a	0.9a	0.6a	77.0	20.6	38.8	39.1	- sil
12207	39-50	B3mg4	0.1a	1.0b	2.3a	2.8a	0.9a	74.9	18.0	39.8	36.6	- sil
12208	50-74	B3m5	1.9b	9.0b	14.8	18.4	2.8	40.1	13.0	24.9	21.5	- 1
<b>pH</b>			<b>ORGANIC MATTER</b>			<b>6C1a</b>	<b>BULK DENSITY</b>					
	8C1a H <sub>2</sub> O 1:1		6A1a ORGANIC CARBON %	6E1a NITROGEN %	C/N	Free Iron as Fe <sub>2</sub> O <sub>3</sub> %	Field 4B4 Water %	State 4A1a Water %	30-Cm. 4B3 Water %	0.D. 4A1c g/cc	4Alb g/cc	4B2 15-Bar Water %
12202	6.0		0.59	0.074	8	1.8	22.3	1.44	23.9	1.42	1.47	8.3
12203	5.2		0.31	0.059	5	2.2	23.6	1.37	28.0	1.35	1.46	10.5
	5.3		0.15	0.010	2	1.1	12.2	1.56	24.2	1.51	1.57	8.2

Soil type: Galloway silt loam, terrace phase

Soil Nos.: 559Tenn-24-2

Location: Fayette County, Tennessee, approximately 17 miles southeast of Somerville, on Cowan Brothers farm, 2 miles south of LaGrange and 650 yards east of LaGrange-Michigan City gravel road. Photo ADB-1F-106(1950)

Vegetation and Use: Cultivated field; grain sorghum.

Slope and Land Form: Nearly level (0-2 percent) broad flat nearly level terrace.

Drainage and Permeability: Somewhat poorly drained; surface runoff slow.  
Permeability slow to moderately slow.

Parent Material: Loess covered terraces and/or old alluvium from loessial uplands.

Samples Collected by: Edwood Pedersen, George Phibbs, D. K. Springer, M. E. Springer, M. L. Flowers, W. C. Mangrum, R. K. Moore, Louis Dungan, and E. C. Sease.

Profiles Described by: R. L. Flowers and E. C. Sease - October 14, 1959.

**Horizon and**

**Lincoln**

**Lab. No. Depth**

Ap 0 to 6 inches Dark brown (10YR4/3) silt loam; weak fine granular structure; very friable; many small roots; few fine and medium concretions; abrupt wavy boundary. 3 to 7 inches thick.

B2 6 to 11 inches Dark yellowish brown (10YR4/4) fine silt loam; weak fine and medium subangular blocky structure; friable; slightly hard when dry; many small roots; few fine concretions; clear wavy boundary. 4 to 6 inches thick.

B3mg1 11 to 15 inches Light yellowish brown (10YR6/4) silt loam, with few fine faint mottles of light gray (10YR7/2) and yellowish brown (10YR5/4); weak fine subangular blocky structure; friable, common roots; common small brown concretions; clear wavy boundary. 2 to 5 inches thick.

B3mg2 15 to 29 inches Mottled brown (10YR5/3) and gray (10YR6/1) silt loam; weak medium subangular blocky structure to vesicular; slightly hard when moist; brittle; friable when crushed; few fine roots; few fine dark yellowish brown (10YR4/4) soft concretions; abrupt irregular boundary.

B3mg3 29 to 39 inches Dark yellowish brown (10YR4/4) silt loam; common gray (10YR6/1) on polygon faces and gray (10YR6/1) tongues inside the polygons; coarse prismatic structure breaking into weak fine angular and subangular blocky structure; slightly hard when moist; brittle breaking to friable; prisms or polygons about six inches in diameter; top of prisms at 29 inches and extend to 7½ inches; 50 percent polygons; few small pores; arbitrary boundary.

Topsoil 0 to 50 Dark yellowish brown (10YR4/4) silt loam with common gray

**SOIL SURVEY LABORATORY**  
**Lincoln, Nebraska**

**LOCATION** Fayette County, Tennessee

SOIL TYPE Calloway silt loam,  
terrace phase

Lincoln LAB NOS. 12226 - 12236

SOIL NOS. S59Tenn-24-5

LABORATORY NUMBER	DEPTH INCHES	HORIZON	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)							3A1		TEXTURAL CLASS	
			VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY	INTERNATIONAL	2A2		
			2-1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	II	III	> 2	
12226	0-6	Ap	1.1a	1.7a	1.5a	1.4b	0.6b	78.1	15.6	37.7	41.4	- sil	
12227	6-10	B21	0.5a	1.4a	1.2a	1.1c	0.6c	72.3	22.9	33.4	39.9	- sil	
12228	10-16	B22g	0.7a	1.8a	1.2a	1.1c	0.8c	70.7	23.7	32.9	39.0	- sil	
12229	16-19	B3g	0.6a	2.2a	1.3a	1.3c	0.8c	72.1	21.7	34.3	39.1	Tr. sil	
12230	19-26	B3mg1	0.9a	2.3a	1.5a	1.4c	0.9c	75.5	17.5	36.6	40.3	Tr. sil	
12231	26-37	B3mg2	0.7a	2.0a	2.3a	2.0b	0.8b	69.7	22.5	34.3	36.8	Tr. sil	
12232	37-52	B3mg3	0.2a	2.2a	4.2b	3.2b	0.9b	69.7	19.6	37.5	33.9	Tr. sil	
12233	52-58	B3mg4	0.3	6.4	13.2	10.0	1.6	54.3	14.2	32.3	25.8	- sil	
12234	58-69	B3mg5	0.2	9.7	19.3	14.2	2.1	44.0	10.5	27.0	21.9	- 1	
12235	69-85	B3u	0.2	12.2	24.2	19.2	2.3	34.3	7.6	24.1	16.7	- sil	
12236	85-11 <sup>+</sup>	Du	0.7	17.1	35.6	28.1	1.9	13.6	3.0	14.4	6.6	- 1a	
pH			ORGANIC MATTER				6C1a Free H <sub>2</sub> O %	BULK DENSITY				4B2	
	8C1a H <sub>2</sub> O %		6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Iron as Fe <sub>2</sub> O <sub>3</sub> %	4B4 Water %	4A1a Water %	4B3 Water %	4A1b Water %	4A1b Water %	15-Bar Water %	
12226	5.4			1.15	0.111	10	2.0	20.0	1.54	23.1	1.52	1.56	7.5
12227	4.9			0.28	0.055	5	2.3	20.6	1.46	25.2	1.46	1.51	9.9
12228	4.8			0.18	0.046		2.8	18.3	1.43	26.1	1.40	1.45	11.2
12229	4.9			0.18	0.041		3.2	17.2	1.42			1.44	10.7
12230	5.1			0.10	0.029		2.6	14.8	1.56	21.4	1.53	1.55	8.9
12231	5.0			0.09			1.5	14.9	1.61	21.5	1.50	1.61	11.8
12232	5.3			0.07			1.8	15.8	1.68	19.4	1.62	1.67	9.8
12233	5.6			0.06			1.3	12.8	1.72	17.0	1.64	1.68	7.9
12234	5.9			0.06			0.9	9.6	1.84	13.8	1.75	1.78	5.1
12235	6.1			0.04			0.7	6.3	1.83	12.2	1.74	1.75	3.6
12236	5.5			0.03			0.3						1.6
5A1a CATION EXCHANGE CAPACITY NH <sub>4</sub> OAc			EXTRACTABLE CATIONS 5B1a				5C3 Base Sat. % on Sum Cations NH <sub>4</sub> OAc	5C1 Base Sat. % on Sum Cations NH <sub>4</sub> OAc	5B1a Sum Ext. Bases < me > 100g >	5A3a Sum Ext. Bases Cations NH <sub>4</sub> OAc	8D3 Sum Ext. Bases Cations NH <sub>4</sub> /Mg		
	6M2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H								
	milliequivalents per 100g soil												
12226	9.5	3.6	1.2	0.1	0.3	13.9	27	55	5.2	19.1	3.0		
12227	10.8	2.1	1.9	0.1	0.2	18.8	19	40	4.3	23.1	1.1		
12228	11.8	1.4	2.1	0.1	0.2	12.2	24	32	3.8	16.0	0.7		
12229	11.1	1.1	1.8	0.1	0.2	11.3	22	29	3.2	14.5	0.6		
12230	10.0	0.5	2.1	0.2	0.2	10.0	23	30	3.0	13.0			
12231	14.0	0.7	5.8	0.6	0.2	10.5	41	52	7.3	17.8			
12232	12.2	0.7	5.2	0.6	0.2	9.3	42	55	6.7	16.0			
12233	8.9	0.8	5.1	0.6	0.1	5.4	55	74	6.6	12.0			
12234	7.0	0.8	3.8	0.4	0.1	3.4	60	73	5.1	8.5			
12235	4.5	0.6	2.5	0.3	0.1	3.1	53	78	3.5	6.6			
12236	1.5	0.2	0.4	0.1	0.1	2.9	19	47	0.7	3.6			

- a. Many Fe-Mn? bearing aggregates.
- b. Few Fe-Mn? bearing aggregates.

- c. Common Fe-Mn? bearing aggregates.
- d. See remarks in description.

Soil type: Calloway silt loam, terrace phase  
 Soil No.: 599Tern-24-5  
 Location: Fayette County, Tennessee, about 17 miles south of Somerville on Wolf River terrace about 2 miles southwest of LaGrange and 1 mile west of LaGrange-Michigan City Road and about 100 feet north of gravel road on Coopers Brothers Farm. Photo AUB-3F-96(1950)

Vegetation and Use: Cotton

Slope and Land Form: Nearly level (0-2 percent) on broad flat river terrace.

Drainage and Permeability: Somewhat poorly drained; surface runoff slow.

Permeability slow to moderately slow.

Parent Material: Loess covered terraces and of old alluvium from loessial uplands.

Samples Collected by: Edwood Pedersen, George Phibbs, R. L. Flowers, W. C. Mangrum, R. K. Moore, and Louis Duncan.

Profile Described by: D. K. Springer and E. C. Sease

Horizon and

Lincoln

Lab. No. Depth

Ap	0 to 6	Dark brown (10YR3/3) silt loam; weak fine granular structure; very friable; many fine roots; few small hard dark brown concretions; clear smooth boundary. 4 to 7 inches thick.
B21	6 to 10	Dark yellowish brown (10YR4/4) heavy silt loam; weak fine and medium subangular blocky structure; friable when moist, slightly hard when dry; few fine roots; few small hard dark brown concretions; clear wavy boundary. 3 to 5 inches thick.
B22g	10 to 16	Yellowish brown (10YR5/4-5/6) heavy silt loam with common medium faint mottles of pale brown (10YR6/3), light yellowish brown (10YR6/4) and dark yellowish brown (10YR4/4); weak medium angular blocky structure; friable when moist, slightly hard when dry; few fine roots; common small pores, few small brown and black, hard and soft concretions; clear smooth boundary. 3 to 6 inches thick.
B2g	16 to 19	Light yellowish brown (10YR6/4) to yellowish brown (10YR5/4) silt loam, with common medium faint mottles of pale brown (10YR6/3), light brownish gray (10YR6/2) and dark yellowish brown (10YR4/4); friable when moist, slightly hard when dry; common small pores; common small brown and black concretions.

**SOIL SURVEY LABORATORY** Lincoln, Nebr. November 1958

**SOIL TYPE** Calloway  
silt loam      **LOCATION** Henderson County, Tennessee

SOIL NOS. 555Tenn-39-1 LAB. NOS. 7703-7714

Described by Joseph Winsor, Ralph McCracken,  
E. C. Sease, Robbie Flowers, C. B. Breinig.

Soil type: Galloway silt loam

Soil No.: 557Tenn-39-1

Date: January 27, 1955

Area: Henderson County, Tennessee

Location: About 10 miles northwest of Lexington, Tennessee. (See photo  
No. 39-52) 150 feet south of A. G. Douglass house and 25 feet west of the  
road. A. G. Douglass house is exactly one mile south of Union Cross School.  
The site is on a slightly convex ridgeline of 2 percent slope. The ridgeline  
is the divide between the Tennessee and Mississippi Rivers drainage system.

Present land use: Cultivated field which in 1954 was in annual lespediza and

orchardgrass.

Sampling party: Joseph Winsor, Ralph McCracken, E. C. Sease, Robbie Flowers,

and C. B. Breinig.

Lincoln

Lab.

OIL SURVEY LABORATORY Lincoln, Nebr. November 1958

**SOIL TYPE** Calloway silt loam      **LOCATION** Henderson County, Tennessee

SOIL NOS. S57Tenn-39-7 LAB. NOS. 7761-7767

Soil type: Galloway silt loam  
 Soil Nos.: S57Tenn-39-7

Date: March 4, 1957

Area: Henderson County, Tennessee

Location: About eight miles north of Lexington, Tennessee (see photo No. 3F-56), on gravel road 1/2 mile north of the Parkers Crossroads - Union cross road. On Webster Pandergrass farm 100 yards south of above described gravel road and 50 yards south of tenant houses. The site is a slightly

Described by: E. C. Sease, Robbie Flowers,  
 and Roy K. Moore.

convex ridgeline.

Present land use: Idle field which in 1956 was in annual lespedeza and crabgrass.

Sampling party: E. C. Sease, Robbie Flowers, and Roy K. Moore.

Lincoln

Lab.

No. Horizon Depth

7761	A <sub>p</sub>	0-6 inches	Brown to dark brown (10YR 4/3) silt loam; weak fine granular structure; very friable; abrupt smooth boundary.
7762	A <sub>3</sub>	6-11 inches	Yellowish brown (10YR 5/4) with a few medium faint mottles of brown to dark brown (10YR 4/3); silt loam; weak fine and medium subangular blocky structure; friable; gradual smooth boundary.
7763	B <sub>21</sub>	11-18 inches	Yellowish brown (10YR 5/4) with a few fine faint mottles of grayish brown (2.5Y 5/2); silt loam; weak medium subangular blocky structure; friable; gradual smooth boundary.
7764	B <sub>22</sub>	18-24 inches	Mottled yellowish brown (10YR 5/8), dark yellowish brown (10YR 4/4), and light brownish gray (10YR 6/2); mottles are many, medium, distinct; silt loam; moderate coarse subangular blocky structure; friable; vesicular; clear smooth boundary.
7765	B <sub>3ml</sub>	24-36 inches	Light brownish gray (2.5Y 6/2) with many coarse prominent mottles of yellowish brown (10YR 5/8) and dark yellowish brown (10YR 4/4); coarse silty clay loam; weak coarse subangular blocky structure; friable; water is perched on this layer in wet seasons; diffuse smooth boundary.
7766	B <sub>3ml</sub>	36-48 inches	Light brownish gray (2.5Y 6/2) with many coarse prominent mottles of light gray (5Y 7/1) and yellowish brown (10YR 5/8); silty clay loam; very weak coarse angular blocky structure; firm; diffuse smooth boundary.
7767	D <sub>ul</sub>	48-58 inches	Mottled pale brown (10YR 6/3), yellowish brown (10YR 5/6), and white (5Y 8/1). mottles are many, coarse, prominent.

**SOIL SURVEY LABORATORY**  
Lincoln, Nebraska

LOCATION Fayette County, Tennessee

SOIL TYPE Collins silt loam

12209 - 12212

Lincoln Lab Nos. 12214 - 12216

SOIL NOS. S59Tenn-24-3

LABORATORY NUMBER	DEPTH INCHES	HORIZON	TABLE I PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)						3A1			TEXTURAL CLASS	
			VERY COARSE SAND 2.1	COARSE SAND 1.0-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.02	CLAY 0.02-0.002	INTERNATIONAL	II	III	
											0.2-0.02	0.02-0.002	
12209	0-6	Ap	0.1	0.5	1.1	2.4	2.1	82.4	11.4	46.1	39.2	-	sil
12210	6-11	C11	0.1	0.1	0.2	0.6	0.8	85.1	13.1	45.9	40.3	-	sil
12211	11-21	C12g	0.1	0.2	0.4	0.9	1.5	85.4	11.5	51.8	35.5	-	sil/sil
12212	21-33	C13g	<0.1	0.3	1.5	5.4	2.5	78.5	11.8	50.7	32.7	-	sil
12213	33-35						Not sampled						
12214	35-51	C14g	<0.1	<0.1	0.1	0.4	0.6	86.8	12.1	37.7	49.9	-	sil/sil
12215	51-58	Alb	0.1a	0.1b	0.5	2.1	1.2	80.5	15.5	31.8	51.0	-	sil
12216	58-68	B2b	0.1a	0.2b	0.7	2.9	2.0	75.0	19.1	35.4	43.1	-	sil
		pH	ORGANIC MATTER			6C1a Free Ironas Fe <sub>2</sub> O <sub>3</sub>	6B1a Organic Carbon %	6B1a Nitrogen %	6C1a Field 4B4 Water	5B1a State 4Aa Water	5B1a 30-Cm. 4Aa Water	5B1a O.D. 4Aa Water	4B2
		H <sub>2</sub> O 1:1				%			%	g/cc	%	g/cc	15-Bar Water %
12209	5.2			0.69	0.067	10	1.2	3.7	1.43	21.3	1.40	1.44	5.5
12210	5.0			0.47	0.055	8	1.3	4.2	1.60	22.8	1.54	1.61	5.9
12211	4.9			0.32	0.039	8	1.1	3.6	1.55	23.6	1.50	1.55	4.9
12212	5.2			0.19	0.028		1.2	3.2	1.57	22.7	1.53	1.58	5.3
12213					Not sampled								
12214	5.6			0.32			1.2	6.1	1.46	26.4	1.42	1.47	5.2
12215	5.2			0.73			1.2	5.1	1.33	28.9	1.27	1.30	5.7
12216	5.2			0.28			1.3	4.5	1.50	24.7	1.35	1.40	7.8
		5A1a CATION EXCHANGE CAPACITY NH <sub>4</sub> OAc	EXTRACTABLE CATIONS 5B1a				5C3 Base Set. % on Sum Options	5C1 Base Set. % on Sum Options	5B1a Sum Ext. Bases NH <sub>4</sub> OAc < me /100g >	5A3a Sum Ext. Options NH <sub>4</sub> OAc < me /100g >	8D3 Ca/Mg		
			6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	H						
			milliequivalents per 100g soil										
12209	6.7	3.2	1.6	<0.1	0.2	4.8	51	75	5.0	9.8	2.0		
12210	6.8	2.5	1.8	0.1	0.1	5.1	47	66	4.5	9.6	1.4		
12211	6.2	2.2	1.6	0.1	0.1	4.6	46	64	4.0	8.6	1.4		
12212	5.5	2.3	1.7	0.2	0.1	3.4	56	78	4.3	7.7	1.4		
12213					Not sampled								
12214	6.8	2.8	1.2	0.2	0.1	4.4	49	63	4.3	8.7	2.3		
12215	8.8	2.5	1.1	0.1	0.1	9.2	29	43	3.8	13.0	2.3		
12216	7.6	2.2	1.0	0.1	0.1	6.8	33	45	3.4	10.2	2.2		

- a. Many Fe-Mn? bearing aggregates.
- b. Common Fe-Mn? bearing aggregates.
- c. See remarks in description.

Soil type: Collins silt loam  
 Soil No.: 559Tenn-24-3  
 Location: Fayette County, Tennessee,  $3\frac{1}{2}$  miles southeast of Somerville on Somerville-LaFrange paved road, 150 feet south of road and 50 feet west of Bennett's Creek, on Wyatt Wilkenson farm. Photo ADR-3F-154(1950)

Vegetation and Use: Cultivated continuous cotton.

Slope and Land Form: Nearly level (0-2 percent) bottom land.

Drainage and Permeability: Moderately well-drained, with medium runoff. Permeability is moderately rapid.

Parent Material: Young alluvium from loess and coastal plain materials.

Samples Collected by: Edwood Pedersen, George Phibbs, D. K. Springer, M. E. Springer, R. L. Flowers, R. K. Moore, W. C. Mangrum, Louis Duncan and E. C. Sease - October 14, 1959.

Profile Described by: E. C. Sease and D. K. Springer - October 14, 1959.

Horizon and

Lincoln

Lab. No. Depth

Ap 0 to 6 inches Brown (10YR5/3) silt loam; weak fine granular structure; very friable; few fine roots; few small concretions; clear smooth boundary. 4 to 6 inches thick.

G11 6 to 11 inches Yellowish brown (10YR5/4) to dark yellowish brown (10YR4/4) coarse silt loam; weak fine subangular blocky structure to massive; firm in place; friable; few fine roots; gradual wavy boundary. 4 to 6 inches thick.

G12g 11 to 21 inches Yellowish brown (10YR5/4) silt loam or silt; with many medium faint mottles of light brownish gray (10YR6/2), and pale brown (10YR6/3); weak fine granular to massive, very friable; moderate thin platy structure in upper part of this layer either stratifications or plow pan; clear wavy boundary. 7 to 11 inches thick.

G13g 21 to 33 inches Brown (7.5YR5/4) to yellowish brown (10YR5/4) silt loam or silt; many medium faint mottles of light brownish gray (10YR6/2); weak fine granular structure to massive; very friable; abrupt wavy boundary. 12 to 15 inches thick.

G14g 33 to 35 inches Reddish yellow (7.5YR6/2) loamy sand; single grain; abrupt wavy boundary. 1" to 2 inches thick. (Not sampled for laboratory but sampled for correlation).

12214 35 to 51 inches Yellowish brown (10YR5/4) silt loam, with few fine faint mottles of light brownish gray (10YR6/2); weak fine granular structure to massive; very friable; clear wavy boundary. 15 to 18 inches thick.

Alb 51 to 58 inches Very dark grayish brown (10YR3/2) silt loam, with few fine faint mottles of gray (10YR5/1); moderate fine granular structure; very friable; many fine pores; clear smooth boundary. 6 to 8 inches thick.

12216 58 to 68 inches Dark yellowish brown (10YR4/4) silt loam; weak fine subangular blocky structure; friable; common fine pores; clear wavy boundary. 8 to 12 inches thick.

R3mp 68 to 103 plus inches Light gray to gray (10YR7/1-6/1) silt or silt loam; with common medium faint mottles of grayish brown (10YR5/2); common soft brown concretions.

Remarks: Colors given are for moist soil. Some horizons have lower oven-dry than field-moist bulk density. The field-moist clods were air-dried and then remoistened to 30-cm. tension before being oven-dried and the volume determined. Wetting to 30-cm. tension against a weak confining pressure may result in irreversible expansion. The result would be lower oven-dry bulk density values than would be obtained were the clods oven-dried directly.

SOIL SURVEY LABORATORY  
Lincoln, Nebraska

LOCATION Fayette County, Tennessee

SOIL TYPE Colline silt loam

Lincoln Lab Nos. 12591 - 12601

SOIL NOS. S59Tenn-24-8

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a								PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1				2A2	TEXTURAL CLASS
			VERY COARSE SAND 2.1	COARSE SAND 1.0-5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY <0.002	INTERNATIONAL	II	III	> 2			
											0.2-0.02	0.02-0.002				
12591	0-8	Ap	<0.1	0.6	1.5	3.7	1.2	77.8	15.2	33.8	47.0	-	sil			
12592	8-17	C11	<0.1	0.1	0.4	1.8	0.9	81.9	14.9	42.5	41.2	-	sil			
12593	18-28	C12g	<0.1	<0.1	<0.1	0.5	1.5	83.7	14.3	43.4	42.2	-	sil			
12594	28-30	C13g	<0.1	<0.1	<0.1	<0.1	<0.1	80.0	20.0	19.6	60.4	-	sil			
12595	30-39	C14g	<0.1	<0.1	<0.1	0.2a	0.3a	87.4	12.1	48.4	39.4	-	sil/si			
12596	39-50	C15g	<0.1	0.1b	0.1b	0.2a	0.5a	87.9	11.2	47.5	41.0	-	si			
12597	50-56	C16g	0.1a	0.3a	0.4b	1.1b	0.7b	83.5	13.9	38.4	46.2	-	sil			
12598	56-58	A11b	0.2a	0.8a	3.0a	2.3b	1.2b	72.6	21.9	26.7	48.2	-	sil			
12599	58-62	A12b	0.2a	0.4a	0.6a	1.9a	1.1a	74.2	21.6	25.5	50.7	-	sil			
12600	62-71	B2gb	0.1a	0.7a	0.9a	2.8a	1.6a	78.4	15.5	34.8	46.6	-	sil			
12601	71-84	B3mgb	0.1d	0.6d	0.8a	3.0f	3.0f	80.3	12.2	40.0	45.0	-	sil/si			
		pH						601a					BULK DENSITY g/cm <sup>3</sup>			
		8C1a			6A1a	6B1a			Free Irons %	Field Water	State Water	30-Cm. Water	0.D. Water		15-Bar Water	
		H <sub>2</sub> O f.i.			ORGANIC CARBON %	NITROGEN %	C/N		Fe <sub>2</sub> O <sub>3</sub> %	4B4	4A1a	4B3	4A1c	4A1b		
12591	5.3				0.55	0.066	8		1.6	17.0	1.51	23.1	1.49	1.53	7.2	
12592	4.9				0.20	0.030			1.4	7.4	1.42	28.7	1.39	1.41	6.2	
12593	5.0				0.21	0.031			1.5	13.2	1.45	28.0	1.42	1.44	6.2	
12594	4.9				0.48				1.9	21.3	1.36	30.0	1.34	1.40	9.2	
12595	5.3				0.29				1.3	17.1	1.46	26.1	1.43	1.44	5.1	
12596	5.5				0.40				1.2	17.6	1.41	28.0	1.38	1.40	5.5	
12597	5.4				0.81				1.4	17.9	1.41	27.1	1.40	1.42	6.8	
12598	5.0				2.06				1.7	25.2	1.19				1.23	
12599	4.8				0.35				1.7	18.6	1.30	29.6	1.28	1.34	9.5	
12600	4.8				0.14				1.6	15.8	1.47	25.3	1.43	1.46	6.8	
12601	4.7				0.07				1.4	15.5	1.58	22.4	1.56	1.57	5.6	
		5A1a			EXTRACTABLE CATIONS 5B1a								5B1a	5A3a	8D3	
		CATION EXCHANGE CAPACITY NH <sub>4</sub> OAc			6N2D	6O2D	6P2a	6Q2a	6H1a	Base Sat. % on Sum	5C3 Base Sat. % on Sum	5G1 Base Sat. % on Sum	5B1a Sum Ext. % Bases	5A3a Ext. % Bases	8D3 Iations Cations NH <sub>4</sub> OAc ← me/100g →	
					Ca	Mg	Na	K	H							
					milliequivalents per 100g soil											
12591	8.5	4.7	1.9	<0.1	0.2	4.9	58	80	6.8	11.7	2.5					
12592	7.0	2.4	2.2	0.1	0.1	5.3	48	68	4.8	10.1	1.1					
12593	7.2	2.4	2.5	0.1	0.1	4.9	51	71	5.1	10.0	1.0					
12594	11.5	3.1	3.6	0.2	0.2	8.3	46	62	7.1	15.4	0.9					
12595	6.9	2.2	2.0	0.1	0.1	4.6	49	64	4.4	9.0	1.1					
12596	6.7	2.5	1.6	0.1	0.1	5.1	46	64	4.3	9.4	1.6					
12597	9.6	3.5	1.4	0.1	0.1	8.5	38	53	5.1	13.6	2.5					
12598	15.4	3.1	1.4	0.2	0.1	22.1	18	31	4.8	26.9	2.2					
12599	9.0	1.9	1.2	0.1	0.2	10.7	24	38	3.4	14.1	1.6					
12600	6.9	1.4	0.8	0.1	0.1	7.5	24	35	2.4	9.9						
12601	5.7	0.7	0.8	0.1	0.1	7.8	18	30	1.7	9.5						

- a. Few Fe-Mn? concr.
- b. Common Fe-Mn? concr.
- c. Many Fe-Mn? concr.

- d. Many Fe-Mn? bearing aggregates.
- e. Common Fe-Mn? bearing aggregates.
- f. Few Fe-Mn? bearing aggregates.
- g. See remarks in description.

Soil type: Collins silt loam  
 Soil No.: 999999-84-8  
 Location: Fayette County, Tennessee, 1 mile southeast of Somerville on Hickory Valley Road, 200 yards east of road and 150 yards south of creek on John Havercamp farm. ADE 3P-150(1950)  
 Vegetation and Use: Cotton - cultivated land.  
 Slope and Land Form: Nearly level (0-1 percent) bottom land.  
 Drainage and Permeability: Moderately well drained; slow runoff and moderate permeability.  
 Parent Material: Alluvium washed from loess and coastal plain materials.  
 Samples Collected by: R. L. Flowers, W. C. Mangrum, R. K. Moore, Louis Duncan and E. C. Sease - November 9, 1959.

Profile Described by: E. C. Sease - November 9, 1959.

Horizon and

Linseal

Lab. No. Depth

Ap 12591	0 to 8 inches	Dark brown (7.5YR4/4) to (10YR4/3) silt loam; weak fine granular structure; very friable; common small roots; clear smooth boundary. 4 to 8 inches thick.
Cll 12592	8 to 17 inches	Dark brown (7.5YR4/4) silt loam with mottles or stratifications of very pale brown (10YR7/3), pale brown (10YR6/3) and light brownish gray (10YR6/2); moderate very fine platy structure or stratifications; very friable; few fine roots; common fine pores or voids; few thin lenses of loamy sand; this layer is yellowish brown (10YR5/4) when crushed; abrupt smooth boundary. 8 to 10 inches thick.
Cn (Not sampled)	17 to 18 inches	Reddish yellow (7.5YR6/6) sand; single grain; loose; abrupt smooth boundary. 1 to 3 inches thick.
C12g 12593	18 to 26 inches	Brown (10YR5/3) to yellowish brown (10YR5/4) silt loam, with many fine faint mottles of dark brown (10YR4/3), grayish brown (10YR5/2), and light brownish gray (10YR6/2); moderate very fine platy structure or stratifications; very friable; few small roots; few small pores; clear smooth boundary. 10 to 12 inches thick.
C13g 12594	26 to 30 inches	Dark brown to dark yellowish brown (10YR4/3-4/4) silt loam; many fine faint mottles of dark gray (10YR4/1), grayish brown (10YR5/2), light brownish gray (10YR6/2) and strong brown (7.5YR5/6); massive, friable, abrupt smooth boundary. 2 to 4 inches thick.
C14g 12595	30 to 39 inches	Brown to dark brown (10YR5/3-4/3) silt loam; many fine faint mottles of grayish brown (10YR4/2) light brownish gray (10YR6/2)

granular structure; very friable; few small holes and pores; clear smooth boundary. 8 to 12 inches thick.

Cl5g 12596	39 to 50 inches	Dark grayish brown (10YR4/2) silt loam with many fine faint mottles of grayish brown (10YR5/2), light brownish gray (10YR6/2) and brown (10YR4/3); massive; crushes to weak fine granular structure; very friable; few thin stratified layers or weak fine platy structure in this horizon; few small pores; diffuse smooth boundary. 10 to 16 inches thick.
Cl6g 12597	50 to 56 inches	Dark brown (10YR4/3) silt loam with many fine faint mottles of grayish brown (10YR5/2) and dark gray (10YR4/1); massive in places; crushed weak fine granular structure; very friable; few fine pores; few small old worm channels; abrupt smooth boundary. 6 to 8 inches thick.

Allb 56 to 58 Very dark grayish brown (10YR3/7) to very dark brown (10YR2/2)

**SOIL SURVEY LABORATORY**  
Lincoln, Nebraska

LOCATION Fayette County, Tennessee

SOIL TYPE Colline Silt Loam

Lincoln Lab Nos. 12602 - 12609

Soil Nos. S59Tenn-24-9

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1Bla			PARTICLE SIZE DISTRIBUTION			(in mm.) (per cent) 3A1			TEXTURAL CLASS
			VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.02	CLAY <0.002	INTERNATIONAL	2A2	
			II	III	> 2							
12602	0-6	Ap	<0.1	<0.1	<0.1	0.2	1.3	88.4	10.1	76.4	13.4	-
12603	6-18	C1	<0.1	<0.1	<0.1	<0.1	0.8	90.0	9.2	47.0	43.8	-
12604	18-24	Alb	0.2a	0.7a	0.8d	1.2c	0.9c	83.6	12.6	39.2	45.8	-
12605	24-37	B2gb	0.6a	1.5b	1.9c	2.7c	1.1c	80.9	11.3	38.4	44.7	-
12606	37-49	B3gb	0.5a	1.4b	1.6c	2.2c	0.9c	80.4	13.0	39.1	43.1	-
12607	49-61	B3mgbl	0.6a	1.3b	1.7b	2.4b	1.1b	81.0	11.9	39.0	44.1	-
12608	61-73	B3mgb2	1.1a	2.7b	3.1c	5.3c	1.8c	74.8	11.2	42.7	36.1	-
12609	73-102	B3mb3	0.3	4.0	12.8	21.5	3.1	48.5	9.8	36.7	21.7	1
pH			ORGANIC MATTER			5Bla			BULK DENSITY d			4B2
	8Cl a H <sub>2</sub> O 1:1		6Ala ORGANIC CARBON %	6Bla NITROGEN %	C/N	Free Iron ss Fe <sub>2</sub> O <sub>3</sub> %	Field State 4B4 Water %	30-Cm. 4Ala Water %	0.D. 4Alc Water %	15-Bar 4Alh Water %		
12602	5.1		0.73	0.070	10	1.1	19.5	1.53	24.5	1.50	1.52	4.6
12603	5.7		0.35	0.038	9	1.1	20.6	1.48	25.8	1.45	1.46	4.2
12604	5.3		0.60	0.061	10	1.3	23.2	1.33	30.6	1.32	1.35	5.5
12605	5.2		0.15			1.6	21.6	1.46	26.0	1.44	1.45	5.1
12606	5.3		0.07			1.4	19.9	1.55	23.1	1.54	1.55	5.2
12607	5.7		0.07			1.6	17.0	1.62	20.6	1.60	1.58	5.3
12608	5.7		0.07			1.6	15.1	1.67	19.1	1.65	1.64	5.3
12609	5.9		0.07			1.0	9.7	1.81	14.2	1.78	1.79	3.8
5Alb CATION EXCHANGE CAPACITY NH <sub>4</sub> OAc			EXTRACTABLE CATIONS 5Bla			5C1 Base Sat.% on Sum NH <sub>4</sub> OAc Options			5Bla Base Sat.% Ext. NH <sub>4</sub> OAc Options			8D3
	6N2b Ca	6O2b Mg	6P2a Na	6S2a K	6Hla H				5A3a Sum Ext. NH <sub>4</sub> OAc Options	Ca/Mg < me/100g >		
12602	6.2	2.5	1.1	0.1	0.1	5.6	40	61	3.8	9.4	2.3	
12603	5.6	2.7	1.1	0.1	0.1	5.3	43	71	4.0	9.3	2.4	
12604	7.0	2.0	0.7	0.1	0.1	7.5	28	41	2.9	10.4		
12605	5.5	1.6	0.7	0.1	0.1	6.1	29	45	2.5	8.6		
12606	5.4	0.9	0.8	0.2	0.1	6.8	23	37	2.0	8.8		
12607	5.5	0.8	0.8	0.4	0.1	6.5	24	38	2.1	8.6		
12608	5.4	0.8	1.0	0.4	0.1	6.3	27	42	2.3	8.6		
12609	4.1	1.0	1.1	0.3	0.1	3.1	45	61	2.5	5.6	0.9	

a. Many Fe-Mn? concr.  
b. Common Fe-Mn? concr.

c. Few Fe-Mn? concr.  
d. See remarks in description.

Soil type: Collins silt loam  
 Soil No.: 6997aum-34-9  
 Location: Fayette County, Tennessee, 2 miles east of Somerville on U. S. Highway 64,  
 1/4 mile south of highway and 200 yards east of Bennett's Creek in field  
 on the Wetzel farm. Photo ADB-3F-24(1950)

Vegetation and Use: Corn and crab grass - cultivated.

Slope and Land Form: Nearly level bottom land.

Drainage and Permeability: Moderately well drained, with medium runoff.  
 Permeability moderate.

Parent Material: Alluvium washed from loessial uplands.

Samples Collected by: R. L. Flowers, W. C. Mangrum, R. K. Moore, Louis Duncan, and  
 E. C. Sease - November 10, 1959. —

Profile Described by: E. C. Sease - November 10, 1959.

Horizon and

Lincoln

Lab-No. Depth

Ap 12602	0 to 6 inches	Brown (10YR5/3-4/3) silt loam weak fine granular structure; very friable; common fine roots; clear smooth boundary. 5 to 8 inches thick.
cl 12603	6 to 18 inches	Brown (10YR4/3) silt loam, with thin layers or stratifications of brown (10YR5/3) silt; massive; when crushed break into weak fine granular structure; very friable; common fine roots; common fine pores; clear smooth boundary. 10 to 12 inches thick.
Alb 12604	18 to 24 inches	Brown (10YR4/3) silt loam with common medium faint mottles of pale brown (10YR6/3), gray (10YR5/1) and grayish brown (10YR5/2); weak fine granular structure to massive; very friable; many small pores; few dark brown soft concretions or segregations; clear smooth boundary. 5 to 8 inches thick.
Hapb 12605	24 to 37 inches	Brown (10YR5/3) silt loam with many medium faint mottles of grayish brown (10YR5/2), light brownish gray (10YR6/2), gray (10YR5/1) and yellowish brown (10YR5/6) weak medium angular and subangular blocky structure to massive; very friable; few patchy clay films; many small pores, holes and voids; common soft brown and black concretions or segregations; clear smooth boundary. 12 to 14 inches thick.
Hapb 12606	37 to 49 inches	Grayish brown (10YR5/2) silt loam with many medium faint mottles of gray (10YR6/1-5/1), yellowish brown (10YR5/6) and brown (10YR5/3); weak fine and medium subangular blocky structure to massive; friable; few patchy clay or silt films along holes, common pores and small holes or voids; few small soft dark brown concretions; clear wavy boundary. 10 to 13 inches thick.
Hapgb1 12607	49 to 61 inches	Mottled gray (10YR6/1), grayish brown (10YR5/2) light brownish gray (10YR6/2) and yellowish brown (10YR5/6) silt loam; mottles are many medium faint; weak medium subangular blocky structure to massive; friable; brittle; common pores or voids; many small dark brown soft concretions and strong brown (7-5YR5/6) segregations. thin gray (10YR5/1) silt streaks on polygon faces; these gray streaks begin in this layer and extend to 102" and are from 1/8" to 1" wide. Diffuse smooth boundary. 24 to 32 inches thick.
Hapgb2 12608	61 to 73 inches	Same as layer above.
Hapb3 12609	73 to 102 inches	grayish brown (10YR5/2) with many medium faint mottles of gray (10YR6/1), dark yellowish brown (10YR3/4) and yellowish brown (10YR5/4) massive; friable; brittle; few small pores, many soft dark brown concretions; seams of gray silt go through this layer; gradual smooth boundary.
Ds	102 to 112 inches	Dark grayish brown (10YR4/2) loamy sand on sand; single grain plus

Remarks: Colors given are for moist soil. Some horizons have lower oven-dry than field-moist bulk density. The field-moist clods were air-dried and then remoistened to 30-cm. tension before being oven-dried and the volume determined. Wetting to 30-cm. tension against a weak confining pressure may result in

## SOIL SURVEY LABORATORY

Lincoln, Nebraska

LOCATION Fayette County, Tennessee

SOIL TYPE Collins Silt Loam

**Lincoln LAB NOS. 12610 - 12614**

SOIL NOS. S59Tenn-24-10

Soil type: Collins silt loam  
 Soil No. 559Tenn-24-10  
 Location: Fayette County, Tennessee 7 miles northwest of Somerville along the Stanton Road, 50 feet east of road and 100 feet north of creek on Alexander Harvey farm. Photo ADB-2F-44(1950)

Vegetation and Use: Corn stubble - cultivated.

Slope and Land Form: Nearly level young alluvial soil.

Drainage and Permeability: Moderately well drained; slow runoff, moderate permeability.

Parent Material: Alluvium washed from loessial uplands.

Samples Collected by: R. L. Flowers, W. C. Mangrum, Louis Dungan, R. K. Moore and E. C. Sease - November 10, 1959

Horizon and  
Lincoln

Lab. No. Depth

Ap 0 to 8 inches Dark brown (10YR4/3) silt loam; weak fine granular structure; very friable; common fine roots; clear smooth boundary. 6 to 9 inches thick.

C11 12611 6 to 20 inches Dark brown (10YR4/3) silt loam; weak very fine platy structure or stratifications; stratified layers are light brownish gray (10YR6/2) and dark yellowish brown (10YR4/4); few medium faint mottles of light brownish gray (10YR5/2), grayish brown (10YR5/2) and dark yellowish brown (10YR4/4) very friable; common small pores; gradual smooth boundary.

C12g 12612 20 to 30 inches Dark brown (10YR4/3) to dark grayish brown (10YR4/2) silt loam, with many medium faint mottles of gray (10YR6/1) light brownish gray (10YR6/2) and dark yellowish brown (10YR3/4); weak fine granular structure to massive; very friable; common fine pores or holes; clear smooth boundary.

C13g 12613 30 to 42 inches Mottled dark brown (10YR4/3) gray (10YR6/1), light brownish gray (10YR6/2) and yellowish brown (10YR5/4) silt loam; mottles are many medium faint; massive; very friable; common small pores and holes; clear smooth boundary.

C14g 12614 42 to 54 inches Dark grayish brown (10YR4/2) silt loam, with common medium faint mottles of light brownish gray (10YR6/2), gray (10YR6/1) and yellowish brown (10YR5/4); gray was along small holes and old root channels; massive breaking into weak fine granular structure; very friable; common small pores or holes.

C15g 54 to 86 inches Water came into hole at 54". Too much water to sample below 54". Bored from 54" to 86". From 54" to 86" about same as 42"-54" except much more concretionary material and more gray; probably B<sub>3m</sub> of buried Calhoun.

D 86 to 96 inches Dark grayish brown (10YR4/2) loam with common coarse faint mottles of gray (10YR6/1) and light brownish gray (10YR6/2). plus

Remarks: Colors given are for moist soil.

**SOIL SURVEY LABORATORY**  
Lincoln, Nebraska

LOCATION Fayette County, Tennessee

SOIL TYPE Collins fine sandy loam

Lincoln Lab Nos. 12615 - 12621

SOIL NOS. S59Tenn-24-11

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a					PARTICLE SIZE DISTRIBUTION (in mm.)			3A1			TEXTURAL CLASS
			VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.02	CLAY 0.02-0.002	INTERNATIONAL	II	III	> 2	
12615	0-8	Ap	<0.1	1.3	4.3	13.1	2.6	69.8	8.9	42.4	35.6	-	sil	
12616	8-20	Cll	0.3	3.7	9.4	12.6	3.0	62.5	8.5	43.8	25.8	-	sil	
12617	22-28	Alb	<0.1	0.5	1.4	2.4	2.0	81.5	12.2	39.8	44.5	-	sil/si	
12618	28-39	Cllb	<0.1	0.3	0.7	1.1	1.1	81.5	15.3	39.5	43.6	-	sil	
12619	39-49	C12gt	<0.1	0.9	2.6	5.3	2.3	76.7	12.2	44.2	37.2	-	sil	
12620	49-58	Cl3b	0.1	8.1	19.9	16.6	2.8	45.0	7.5	31.6	21.5	-	1/fsl	
12621	58-76	Du	0.1	6.6	20.6	29.5	4.0	33.7	5.5	31.8	15.7	-	sl/fsl	
pH			ORGANIC MATTER					BULK DENSITY					4B2	
			8Cl <sub>a</sub> <sub>H<sub>2</sub>O</sub> 1:1		6Gla ORGANIC CARBON %	6Ch <sub>a</sub> NITROGEN %	C/N	6C1a Free Iron as Fe <sub>2</sub> O <sub>3</sub> %	Field 4B4 Water %	State 4Ala Water %	30-Cm. 4B3 Water %	O.D. 4AlO g/cc	4Alh g/cc	15-Bar Water %
12615	4.7				0.52	0.052	10	1.0	15.1	1.69	19.2	1.67	1.70	4.2
12616	5.1				0.19	0.024		1.0	11.6	1.59	17.8	1.58	1.60	3.1
12617	5.3				0.39	0.042	9	1.1	17.8	1.43	25.5	1.41	1.44	5.4
12618	5.2				0.21			1.4	17.8	1.38	26.4	1.36	1.39	6.0
12619	5.3				0.18			1.2	18.0	1.46	24.4	1.44	1.47	5.2
12620	5.4				0.14			0.7	15.7	1.54	19.9	1.54	1.56	3.3
12621	5.4				0.10			0.6						2.8
5A1a CATION EXCHANGE CAPACITY NH <sub>4</sub> OAc			EXTRACTABLE CATIONS 5B1a					5C3 Base Sat. % on Sum Nutrients	5C1 Base Sat. % Bases	5B1a Sum Ext.	5A3a Ext.	6D3 Ca/Mg <me/100g>		
			6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6W1a H							
			milliequivalents per 100g soil											
12615	5.3	1.9	0.8	0.1	0.2	5.6	35	57	3.0	8.6				
12616	4.2	1.5	0.9	0.1	0.1	3.9	40	62	2.6	6.5				
12617	6.2	2.0	1.2	0.1	0.1	5.6	38	55	3.4	9.0	1.7			
12618	6.8	2.0	1.2	0.1	0.1	6.6	34	50	3.4	10.0	1.7			
12619	5.5	1.8	1.0	0.1	0.1	5.3	36	54	3.0	8.3	1.8			
12620	3.9	1.2	0.8	<0.1	0.1	3.6	37	54	2.1	5.7				
12621	2.9	1.0	0.7	<0.1	0.1	2.6	41	62	1.8	4.4				

Soil type: Collins fine sandy loam  
 Soil Nos.: 557Temp-24-11.  
 Location: Fayette County, Tennessee, 17 miles south of Somerville, 2 miles south of Bateman's bridge along the gravel road that turns left off the Bateman bridge road at the Lewis farm. On Lewis farm 100 yards south of gravel road and 100 yards west of creek. Photo ADB-2F-4(1950)

Vegetation and Use: Cotton - cultivated.

Slope and Land Form: Nearly level (0-1 percent) bottom land.

Drainage and Permeability: Moderately well drained; slow runoff and moderate permeability.

Parent Material: Alluvium washed from loess and coastal plain material.

Samples Collected by: R. L. Flowers, W. C. Mangrum, R. K. Moore, Louis Dungan, and E. C. Sease - November 12, 1959.

Profile Described by: E. C. Sease - November 12, 1959

Horizon and

Lincoln

Lab. No. Depth

Ap	0 to 8 inches	Brown (10YR4/3) to dark grayish brown (10YR4/2) loam or fine sandy loam; weak fine granular structure; very friable; few medium faint mottles (in the 6 to 8 inch layer) of grayish brown (10YR5/2) brown (10YR5/3) and yellowish brown (10YR5/4); this layer is compact and appears to be a plow pan; common small roots; clear smooth boundary.
C11	8 to 20 inches	Brown (10YR4/3) to yellowish brown (10YR5/4) loam; few fine faint mottles of brown (10YR5/3); massive in place breaks into weak fine granular structure; very friable; common small holes; few small roots; occasional thin layers of sand less than 1/2 inch thick; in places very fine platy structure or stratifications; abrupt smooth boundary.
Cn (Not sampled)	20 to 22 inches	Light yellowish brown (10YR6/4) sand; single grain; loose; this is not a continuous layer; it varies in thickness from 0 to 3 inches. Abrupt smooth boundary.
Alb	22 to 36 inches	Dark brown (10YR4/3 to 3/3) silt loam; common fine faint mottles of grayish brown (10YR5/2) and yellowish brown (10YR5/4); weak fine granular structure; very friable; common pores; common small holes; clear smooth boundary.
C11b	26 to 39 inches	Dark brown (7.5YR4/4) silt loam; few fine faint mottles of grayish brown (10YR5/2) and dark yellowish brown (10YR4/4); weak fine granular structure; very friable; silt or clay films along old wormholes; common pores; many wormholes; gradual smooth boundary.
C12gb	39 to 49 inches	Brown to dark brown (10YR4/3) silt loam; common fine faint mottles of grayish brown (10YR5/2), grey (10YR5/1) and dark yellowish brown (10YR3/4); weak medium granular; very friable; slightly brittle; few patchy clay films on old worm channels; common pores; common wormholes; common small pores or holes; gradual smooth boundary.
C13b	49 to 58 inches	Brown to dark brown (10YR4/3) loam or fine sandy loam; common medium faint mottles of dark yellowish brown (10YR3/4); and grayish brown (10YR5/2); massive; very friable; few small holes and pores; clear smooth boundary.
Ds	58 to 76 inches plus	Brown (10YR4/3) sandy loam; massive; friable; water table at 76 inches

Remarks: Colors given are for moist soil.

Cumberland silt loam

SOIL Nos. S53Tenn-5-13 LOCATION Blount County, Tennessee

~~SOIL SURVEY LABORATORY~~ Beltsville, Maryland

LAR Nos. 53744-53746

Soil Type: Cumberland silt loam

Soil No.: S53Tenn-5-13

Location: Blount County, Tennessee, 4-1/2 miles northwest of Friendsville.

Vegetation and land use: Unimproved pasture. Lespedeza and weeds.

Horizon and  
Beltsville  
Lab. No.

Ap 0 to 5 inches. Reddish brown (5YR 4/3) friable silt loam.  
53744

B1 5 to 14 inches. Red (2.5YR 4/6) friable silty clay loam; weak fine blocky structure. Gradual  
53745 gradation to;

B2 14 to 56 inches. Red (2.5YR 4/6) to dark red (2.5YR 3/6) friable silty clay; plastic when wet;  
53746 moderate medium blocky structure. Below 38 inches are occasional very small angular chert  
fragments and rounded pebbles. The underlying material is the residual products of a cherty  
dolomitic limestone.

soil Cumberland silt loam

SOU Mrs 853Penn-5-18

LOCATION Blount County, Tennessee

**SOIL SURVEY LABORATORY, Beltsville, Maryland**

LAB. Nos. 53761-53763

Soil Type: Cumberland silt loam  
Soil No.: S53Tenn-5-18  
Location: Blount County, Tennessee. 2 miles south of Wildwood.  
Vegetation and land use: Tobacco - crimson clover and date rotation.

63

Horizon and  
Beltsville  
Lab. No.

- Ap 0 to 7 inches. Reddish brown (5YR 4/4) friable silt loam; moderate medium granular structure.  
53761
- B1 7 to 14 inches. Dark red (2.5YR 3/6) friable silty clay loam with a few streaks of reddish  
53762 brown along old root channels; moderately developed medium blocky structure. Gradual  
gradation to;
- B2 14 to 56 inches. Dark red (10R 3/6) moderately friable to firm silty clay loam; moderately  
53763 developed medium blocky structure.

SOIL Cumberland silt loam

SOIL Nos. 555Penn-16-27 LOCATION Coffee County, Tennessee

eroded undulating phase

SOIL SURVEY LABORATORY Beltsville, Maryland

LAB. Nos. 551982 - 551991

Depth (in.)	Horizon	Size class and particle diameter (mm) 3A1												3B2 Cm	Coarse fragments 3B1				
		Total			Sand			Silt			Int. III (0.05-0.02) (0.02- 0.002)				2A2 ≥ 2 Pct.				
		Sand (2-0.05) (0.05- 0.002)	Silt (0.05- 0.002)	Clay (< 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Int. III (0.05-0.02) (0.02- 0.002)	Int. II (0.2-0.02) (0.02- 0.002)	Int. II (0.2-0.02) (0.02- 0.002)	2-19 Pct.	19-76 Pct. of < 76mm					
		Pct. of < 2 mm																	
0-8	AP	58.7	22.8	0.8	2.0	3.2	6.9	5.6	33.9	34.1	-	-	-						
8-16	A3	55.1	3.16	0.8	1.6	2.0	4.5	4.4	39.4	22.6	-	-	-						
16-23	B1	50.8	34.4	1.0	2.1	4.8	5.0	35.2	23.5	-	-	-	-						
23-27	B21	44.0	41.8	0.6	1.2	2.2	5.2	5.0	31.2	21.0	-	-	-						
27-38	B22	41.6	44.1	0.6	1.0	2.2	5.2	5.3	28.4	21.6	-	-	-						
38-45	B23	39.5	46.3	0.4	1.0	2.2	5.2	5.4	28.4	19.6	-	-	-						
45-52	B24	35.7	49.5	0.3	0.9	2.3	5.5	5.8	25.3	19.5	-	-	-						
52-61	B25	32.4	52.9	0.3	1.0	2.2	5.4	5.8	23.3	18.2	-	-	-						
61-75	B31	26.7	59.3	0.4	0.8	2.0	5.1	5.7	19.4	16.1	-	-	-						
75-87	B32	27.3	58.6	0.2	0.8	2.1	5.2	5.8	18.9	17.3	-	-	-						
3A2																			
Depth (in.)	6A1a Organic carbon	Nitrogen	C/N	Carbonate as CaCO <sub>3</sub> Fe2O3	Bulk density				4D1 Ext. iron as Fe2O3	Water content			4C1 WRD In/in	pH					
					Pct.	Pet.	g/cc	g/cc		4A1e ½ bar	4A1h Over dry	COLE		4B1c ½ bar	4B2 15 bar	8C1c (1:1)	8C1a H <sub>2</sub> O		
					Pct.	Pet.				Pet.	Pet.	Pet.				KCl			
					1.17	0.118	10			2.4							6.6		
0-8					0.74	0.053	14			3.0							6.3		
8-16					0.28	0.038				3.3							5.0		
16-23																			
23-27					0.27	0.040				4.1								4.8	
27-38					0.25	0.040				4.4								4.8	
38-45					0.26	0.041				4.7								4.8	
45-52					0.26	0.041				5.1								4.8	
52-61					0.26	0.041				5.5								4.8	
61-75					0.26	0.046				6.4								4.7	
75-87					0.25	0.037				6.3								4.8	
Extractable bases 5B1a																			
Depth (in.)	6B1a				Ext. acidity	CEC			6G1d Ext. Al	Ratios to clay			8D3 Ca/Mg	Base saturation					
	6N2d Ca	6O2b Mg	6P2a Na	6Q2a K		Sum	5A3a Sum ammonium			CEC Sum	Ext. iron	15-bar water		5C9 Sum cation Pct.	5C1 NH <sub>4</sub> OAc Pct.				
0-8	7.7	0.5	0.1	0.2			4.9	13.4									63		
8-16	5.8	0.2	0.1	0.2			5.1	11.4									55		
16-23	2.7	0.7	0.1	0.2			8.2	11.9									31		
23-27	1.6	0.8	0.1	0.2			9.1	11.8									23		
27-38	1.0	0.9	tr.	0.2			9.1	11.8									19		
38-45	1.3	0.9	tr.	0.3			8.8	11.3									22		
45-52	2.1	0.9	tr.	0.3			8.2	11.5									29		
52-61	3.0	1.4	0.1	0.3			8.5	15.3									36		
61-75	3.0	1.3	0.1	0.3			9.3	14.0									34		
75-87	2.9	0.5	0.1	0.3			8.9	12.7									30		
Clay Fraction Analysis 7A1b-d																			
Depth (in.)	Mt.	Chl.	Vm.	Ml.	Int.	Qtz.	Kl.	Gibbsite	7A2 X-ray			7A3 IR			7A4 DFA				
0-8									XX			XX							
8-16									X										
16-23																			
23-27																			
27-38																			
38-45																			
45-52																			
52-61																			
61-75																			
75-87									XX										

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, Ml. = mica,  
Int. = interstratified layer, Qtz. = quartz, Kl. = KaoliniteRelative amounts: blank = not determined, dash = not detected,  
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Cumberland silt loam, eroded undulating phase.

Soil No.: S55Tenn-16-27

Location: Coffee County, Tennessee. 12 miles southeast of Manchester on U. S. Highway 41 to gravel road at Howard McGregor farm. 0.1 mile south on gravel road to fence corner on east side of road. 200 yards east of road and 50 feet west by north of large hackberry tree at eastern boundary of field which is 60 feet south of northeast corner of field. Aerial photo 7G-58.

Morison and  
Beltsville  
Lab. No.

- Ap      0 to 8 inches. Dark reddish brown (5YR 3/3) friable heavy silt loam; contains enough sand to give the soil a gritty feel; moderate crumb structure; many fine roots less than 1.0 mm in diameter; a few small pinholes and wormholes ranging up to 2.0 mm in diameter.
- A3      8 to 16 inches. Dark reddish brown (2.5YR 3/4) friable light silty clay loam; moderate fine granular structure; contains a few soft black concretion less than 1.0 mm in diameter; common fine roots less than 1.0 mm in diameter.
- B1      16 to 23 inches. Dark reddish brown (2.5YR 3/4) friable heavy silty clay loam; slightly redder than horizon above; weak fine subangular and angular blocky structure; few to common clay skins on vertical and horizontal faces; common black concretions, segregations and stains ranging up to 1.0 in diameter; a few small roots present.
- B2I      23 to 27 inches. Dark red to dusky red (10R 3/6 - 3/4) friable to firm silty clay; moderate fine to medium angular blocky structure; continuous prominent clay skins on vertical and horizontal faces; common black concretions and segregations 1.0 mm in diameter; occasional quartzite pebble 2 to 5 mm in diameter; contains fine sand to give the dry soil a gritty feel.
- B22      27 to 38 inches. Dusky red (10R 3/4) firm clay; strong coarse angular structure which breaks to strong fine and medium angular blocky structure; continuous prominent clay skins; interior of pedis are dark red (2.5YR 3/6); occasional quartzite pebble ranging from 1.0 to 5.0 mm in diameter.
- B23      38 to 45 inches. Dusky red (10R 3/4) firm clay; strong coarse angular blocky structure which breaks to strong fine angular blocky structure; continuous prominent clay skins; a few black concretions and segregations ranging from 0.5 to 2.0 mm in diameter; occasional quartzite pebble and chert gravel ranging from 1.0 to 5.0 mm in diameter; contains a few pinholes and wormholes and some sparse rootlets.

SOIL Cumberland silt loam,  
eroded undulating phase  
SOIL SURVEY LABORATORY Beltsville, Maryland SOIL No. 555Tenn-16-28 LOCATION Coffee County, Tennessee  
LAB. Nos. 551992 - 552000

Depth (in.)	Horizon	Size class and particle diameter (mm) SAI											3B2 Cm	Coarse fragments 3B1			
		Total			Sand				Silt					2A2 ≥ 2 Pct.	2-19 Pct. of < 76mm		
		Sand (2-0.05) (0.05- 0.002)	Silt (0.05- 0.002)	Clay (< 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Pct. of < 2 mm	Pct. of 2-19 mm	Pct. of < 2 mm					
0-7	Ap	52.6	17.8	0.3	1.7	5.3	13.5	8.8		35.6	33.1						
7-13	A3	54.0	27.4	0.1	0.8	3.1	8.4	6.2		41.5	23.3						
13-21	B1	51.2	30.6	0.3	1.0	3.9	8.0	5.9		37.7	23.8						
21-29	B21	43.1	37.6	0.3	0.9	3.0	8.6	6.5		31.6	22.9						
29-40	B22	38.7	41.5	0.4	0.8	3.2	8.8	6.6		25.9	24.4						
40-52	B23	36.6	42.2	0.1	0.8	3.4	9.9	7.4		26.0	23.4						
52-61	B24	32.8	44.0	0.3	0.8	3.6	10.2	8.3		23.5	23.3						
61-73	B31	31.7	44.3	0.2	0.8	3.7	10.8	8.5		21.6	24.8						
73-85+	B32	28.8	44.2	0.2	0.9	4.1	11.9	9.9		20.2	25.3						
<hr/>																	
Depth (in.)	Organic carbon	Nitrogen	C/N	Carbonate as CaCO <sub>3</sub>	Ext. Iron as Fe2O3	Pct.	Ext. Iron as Fe2O3	4Alu g/ber	4A1h g/cc	Water content	4C1	pH					
	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	g/ber	g/cc	COLE	Pct.	4B1c g/ber	4B2 15 ber	WRD	4C1 In/in	8C1c (1:1)	8C1a KCl H <sub>2</sub> O
0-7	1.20	0.050	15					1.7									5.8
7-13	0.58	0.056	10					2.4								5.5	
13-21	0.36	0.041						2.7								5.2	
21-29	0.34	0.038						3.5								5.0	
29-40	0.27	0.034						3.9								4.9	
40-52	0.24	0.033						4.1								4.7	
52-61	0.24	0.032						4.5								4.7	
61-73	0.25	0.031						4.6								4.6	
73-85+	0.25	0.031						4.7								4.6	
<hr/>																	
Depth (in.)	Extractable bases 3B1a					G1a Ext. acidity	CEC		6G1d Ext. Al	Ratio to clay			8D3 Ca/Mg	Base saturation			
	6N2d Ca	603b Mg	6P2a Na	6Q2a K	Sum		BAje Sum cation			CEC Sum	Ext. iron	15-ber water		5C3 Sum cation Pct.	5C1 NH <sub>4</sub> OAc Pct.		
0-7	3.6	0.8	0.1	0.3		6.6	11.4									42	
7-13	3.4	0.4	tr.	0.2		5.9	9.9								40		
13-21	3.4	1.2	tr.	0.2		6.4	11.2								43		
21-29	1.6	1.5	tr.	0.2		7.0	10.3								32		
29-40	0.4	1.6	0.1	0.2		8.2	10.5								22		
40-52	0.3	0.2	0.1	0.2		9.3	10.1								8		
52-61	0.1	1.8	0.1	0.2		10.1	12.3								18		
61-73	0.1	0.8	0.1	0.2		9.9	11.4								11		
73-85+	0.1	0.6	0.1	0.2		9.9	11.2								11		
<hr/>																	
Clay Fraction Analysis 7Alb-d																	
Depth (in.)	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Al	Gibbsite	7A2 X-ray	DIA			7A3				
0-7									X-ray								
7-13																	
13-21																	
21-29																	
29-40																	
40-52																	
52-61																	
61-73																	
73-85+																	

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, Mi. = mica,  
Int. = interstratified layer, Qtz. = quartz, Al. = kaolinite

Relative amounts: blank = not determined, dash = not detected,  
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Cumberland silt loam, eroded undulating phase.

Soil No.: S55Tenn-16-28

Location: Coffee County, Tennessee. 1.7 miles east of Hillsboro on Hillsboro-Rodgers Quarry Road. 125 feet south of road at a fence corner on the north side of road, which is 100 yards east of the S. J. Meyers house, and 25 feet east of corn field. Aerial photo 70-54.

Vegetation and land use: Lespedeza and crab grass in small grain stubble.

Slope and land form: 3 percent.

Physiographic position: Broad undulating high terrace ridge.

Horizon and  
Beltsville  
Lab. No.

Ap 551992	0 to 7 inches. Dark brown (7.5YR 3/2) friable silt loam; weak fine crumb structure; contains many fine roots and an occasional fine reddish brown and dark reddish brown (5YR 4/4 and 3/4) splotch apparently brought to surface by subsoiling or deep plowing.
A3 551993	7 to 13 inches. Reddish brown (5YR 4/3) friable light silty clay loam; moderate fine granular to weak fine subangular blocky structure; contains many fine roots and common pinholes and worm holes.
B1 551994	13 to 21 inches. Dark reddish brown (2.5YR 3/4) friable heavy silty clay loam; slightly redder than above horizon; weak to moderate fine subangular blocky structure; a few clay skins on pedes; common fine roots; contains a few black concretions 1.0 mm in diameter and an occasional quartzite pebble 1.0 to 2.0 mm in diameter.
B21 551995	21 to 29 inches. Dark reddish brown (2.5YR 3/4) exterior and dark red (2.5YR 3/6) interior; firm silty clay; moderate fine to medium angular blocky structure; clay skins on vertical and horizontal faces become more prominent with depth; contains a few black concretions 1.0 mm in diameter and a few fine roots.
B22 551996	29 to 40 inches. Dark reddish brown (2.5YR 3/4) exterior, dark red (2.5YR 3/6) interior; firm clay; strong coarse angular blocky structure which breaks to strong fine angular blocky structure; common black concretions and segregations 1.0 to 2.0 mm in diameter; occasional quartzite pebble 0.5 to 1.0 mm in diameter; continuous prominent clay skins; a very few fine roots.
B23 551997	40 to 52 inches. Dark reddish brown (2.5YR 3/4) exterior, dark red (10R 3/6) interior; firm clay; moderate to strong coarse angular blocky structure which breaks to moderate to strong fine angular blocky structure; contains an occasional medium prominent brown (7.5YR 5/4) and pale brown (10YR 6/3) streak of silty clay loam or silty clay; a few black concretions 1.0 mm in diameter; continuous clay skins on pedes; occasional fine roots.
B24 551998	52 to 61 inches. Dusky red (10R 3/4) exterior, dark red (10R 3/6) interior; friable to firm clay; moderate to strong coarse angular blocky structure which breaks to moderate to strong fine angular blocky structure; continuous prominent clay skins; contains occasional black concretions 1.0 mm in diameter.
B31 551999	61 to 73 inches. Dusky red (10R 3/4) exterior, dark red (10R 3/6) interior; friable to firm clay; contains a few fine and medium prominent gray, pale brown (10YR 5/1 - 6/3), and brown (7.5YR 5/4) variegations; moderate coarse angular blocky structure which breaks to moderate fine angular blocky structure; continuous prominent clay skins on pedes; contains an occasional quartzite pebble 1.0 to 2.0 mm in diameter.
B32 552000	73 to 85 inches plus. Dusky red (10R 3/4) exterior, dark red (10R 3/6) interior; friable to firm clay; contains a few medium and fine prominent gray, pale brown (10YR 5/1 - 6/3) and brown (7.5YR 5/4) variegations; moderate coarse angular blocky structure; clay skins are slightly less prominent than in horizon above; contains occasional quartzite pebble 1.0 to 2.0 mm in diameter.

**soil Dandridge silt loam**

SOIL Nos. 853Tenn-5-5 LOCATION Blount County, Tennessee

**SOIL SURVEY LABORATORY Beltsville, Maryland**

LAB Nos 53714-53715

Soil Type: Dandridge silt loam

Soil No.: S53Tenn-5-5

Location: Blount County, Tennessee. 1/4 mile south of Hopewell.

Vegetation and land use: Forest.

Horizon and  
Beltsville  
Lab. No.

A2 53714 0 to 8 inches. Yellowish brown (10YR 5/4) moderately plastic silt loam. Contains numerous soft and hard shale fragments.

C 53715 8 inches plus. Yellowish brown (10YR 5/4) plastic silty clay soil material mixed with leached and unleached shale fragments. Calcareous shale bedrock is at depth of 17 inches, locally.

Note: Colors refer to moist soil.

8C3-421  
10-84

**U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE**

soil ... Dandridge silt loam

SOIL Nos. 853 Penn. 5-6

LOCATION Blount County, Tennessee

**SOIL SURVEY LABORATORY** Beltsville, Maryland

LAB. Nos. 53716-53717

Soil Type: Dandridge silt loam

Soil No.: S53Tenn-5-6

Location: Blount County, Tennessee. 2 miles south of Hopewell.

Vegetation and land use: Forest.

Horizon and  
Beltsville  
Lab. No.

A2 53716 0 to 8 inches. Yellowish brown (10YR 5/4) moderately plastic silt loam to silty clay loam. Numerous weathered and partially weathered shale fragments. Upper 1 inch stained dark with organic matter.

C 53717 8 inches plus. Yellowish brown (10YR 5/4) plastic silty clay loam soil material mixed with soft and hard shale fragments. Calcareous shale bedrock is at depth of 16 inches.

soil Decatur silt loam

SOIL Nos. 853Tenn-5-3 LOCATION Blount County, Tennessee

**SOIL SURVEY LABORATORY Beltsville, Maryland**

LAR Nos. 53705-53709

Soil Type: Doseatur silt loam

Soil No.: 8597mm-5-3

Location: Blount County, Tennessee. 1/2 mile west of Maryville.

Vegetation and land use: Permanent pasture. Orchard grass and lespedeza.

Horizon and

Beltaville

Lab. No.

Ap 0 to 8 inches. Dark reddish brown (5YR 3/3) friable silt loam.

53705

B1 8 to 14 inches. Dark reddish brown (2.5YR 3/4) friable silty clay loam; moderately developed fine blocky structure.

53706

B21 14 to 20 inches. Dark red (2.5YR 3/6) firm silty clay; moderately developed medium blocky structure.

53707

B22 20 to 40 inches. Dark red (10R 3/6) firm silty clay; strongly developed medium blocky structure.

53708

C 40 to 60 inches. Red (10R 4/6) to dark red (10R 3/6) firm or very firm silty clay. A few faint brownish yellow mottles. Strongly developed medium blocky structure.

53709

soil. Decatur silt loam

S011 No. 853Tenn-5-4

LOCATION Blount County, Tennessee

**SOIL SURVEY LABORATORY Beltsville, Maryland**

LAB. Nos. 53710-53713

Soil Type: Decatur silt loam

Soil No.: 853Tenn-5-4

Location: Blount County, Tennessee. 1/2 mile south of Clover Hill.

Vegetation and land use: Winter pasture - tobacco. Crimson clover and oats.

Horizon and  
Beltsville  
Lab. No.

Ap 0 to 7 inches. Dark reddish brown (5YR 3/3) friable silt loam to silty clay loam.  
53710

B1 7 to 17 inches. Dark reddish brown (2.5YR 3/4) to dark red (2.5YR 3/6) firm silty clay loam;  
53711 moderately developed fine blocky structure.

B2 17 to 39 inches. Dark red (10R 3/6) firm silty clay; moderate to strongly developed medium  
53712 blocky structure.

C 39 to 60 inches. Red (10R 4/6) to dark red (10R 3/6) firm or very firm silty clay; strongly  
53713 developed medium to coarse blocky structure. A few faint brownish yellow mottles.

**SOIL SURVEY LABORATORY** Lincoln, Nebr. **October 1963**

**SOIL TYPE** Dakoven  
silt loam **LOCATION.** Dyer County, Tennessee

**SOIL NOS.** S61Tenn-23-8 **LAB. NOS.** 16425-16430

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent) 3AL								TEXTURAL CLASS	
		VERY SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY	> 2		
0-6	A <sub>1</sub>	0.1a	0.2a	Tr.a	0.1a	1.2b	75.3	23.1	45.2	31.4	

Soil type: Dakoven silt loam

Soil Nos. : 861Tenn-23-8

Location: Dyer County, Tennessee; north of Dyersburg, Tennessee, from junction of U. S. Highway 51 and U. S. Highway 51 by-pass, one mile to a gravel road - on gravel road 0.25 mile south - 300 feet north east to sample site which is also 30 feet north of a field road. Aerial photo ADN-2R-42.

Vegetation and use: Recently combined soybeans.

Slope and land form: Slight depression in recent flood plain.

Drainage and permeability: Somewhat poorly drained with very slow runoff and slow internal drainage; Permeability is slow.

Parent material: Alluvium, chiefly from loess, deposited under ponded conditions.

Collected by: E. J. Pedersen, J. L. Millet, J. A. Elder, E. C. Sease, W. C. Moffitt, C. L. Moore, and W. C. Jackson.

Described by: W. T. Brown, October 16, 1961.

Horizon and

Lincoln

Lab. Number

Ap1

0 to 6 inches. Very dark gray (10YR 2/1) silt loam; coarse angular clods breaking to

undecomposed corn residue in lower one inch; abrupt smooth boundary.

Ap2 6 to 10 inches. Very dark gray (10YR 3/1) silt loam or silty clay loam with few fine roots; clear smooth boundary.

16426 (10YR 6/1) mottles; coarse angular clods breaking to weak fine granular structure; friable; few very

fine roots; clear smooth boundary.

Alb1 10 to 18 inches. Black (N 2/1) silty clay loam, moderate fine prismatic structure breaking to moderate

medium subangular blocky structure; friable; few fine roots; few very fine pores; few small black con-

cretions; gradual smooth boundary.

Alb2 18 to 24 inches. Very dark gray (10YR 3/1) silty clay loam with few coarse distinct yellowish brown

(10YR 5/4) mottles; moderate medium prismatic structure breaking to moderate medium subangular blocky

structure; friable; few fine roots; few very fine pores; few small black concretions; clear smooth

boundary.

Clg 24 to 39 inches. Dark gray (10YR 4/1) silt loam with many coarse distinct yellowish brown (10YR 5/4)

16429 mottles; weak coarse prismatic structure; friable; few very fine pores; few root and worm holes; clear

SOIL SURVEY LABORATORY Lincoln, Nebr. October 1963

SOIL TYPE Dekovitz silt loam LOCATION Dyer County, Tennessee

SOIL NOS. 86 Tenn-23-9 LAB. NOS. 16431-16436

DEPTH INCHES	HORIZON	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1										TEXTURAL CLASS
		2.1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002	> 2	
0-8	Ap	0.1a	0.1a	0.2a	0.6a	0.5b	74.7	23.8	29.8	45.6	-	
8-15	Albl	0.2a	0.3a	0.1a	0.2a	0.6b	70.6	28.0	36.7	34.6	-	
15-20	Alb2	0.1a	0.7a	0.3a	0.3a	0.5a	71.0	26.9	38.3	33.4	-	
20-37	Clg	0.1a	0.3a	0.1a	0.2a	0.6b	72.3	26.4	37.2	35.8	-	
37-55	C2g	0.3a	0.3a	0.1a	0.2a	0.8a	75.7	22.6	39.0	37.6	-	
55-63	C3g	0.4a	0.6a	0.1a	0.2a	1.0d	77.9	19.8	44.1	34.9	-	

  

OCla	6E1c	ORGANIC MATTER	FIELD TESTS	BULK DENSITY			A.D.	WATER RETENTION	4CL
				4B4	4Ala	30-cm.			
CaCO <sub>3</sub> equiv-	6Ala	6. Bla	C/N				4Alc	4Alb	4B2
							1/3-Bar	15-Bar	15-to

Soil type: Dekoven silt loam  
Soil Nos. : 861Tenn-23-9

Location: Dyer County, Tennessee; from Roellen 1.8 miles south to a gravel road parallel to a railroad - on gravel road 0.8 mile west - on field road 0.2 mile south - 100 feet east from ditch to sample site which is also 30 feet south of a field road; sample site is on the Ed Davis farm. Aerial photo ADN-1R-102.

Vegetation and use: Corn and sorghum recently cut for silage.

Slope and land form: Slight depression in ~~perfect~~ flood plain.

Drainage and permeability: Somewhat poorly drained with slow runoff and slow internal drainage; permeability is

slow.

Parent material: Alluvium, chiefly from loess, deposited under ponded conditions.

Collected by: E. J. Pedersen, J. L. Millet, J. A. Elder, E. C. Sesse, W. C. Moffitt, G. L. Moore, and W. C. Jackson.

Described by: W. T. Brown, October 16, 1961.

Horizon and  
Lincoln  
Lab. Number

Ap 16431 0 to 8 inches. Very dark grayish brown (10YR 3/2) silt loam; weak fine granular structure; friable; common fine roots; abrupt smooth boundary.

Albl 16432 8 to 15 inches. Black (10YR 2/1) silty clay loam; weak fine prismatic structure breaking to weak medium subangular blocky structure; friable; common fine roots; thin patchy clay films on vertical ped faces; few fine pores; clear smooth boundary.

A1b2 15 to 20 inches ~~Heavy dark reddish brown (10YR 2/1) at the 15-20 in. depth. Weak fine prismatic structure breaking to~~

Soil Dellrose cherty silt loam, eroded steep SOIL Nos. 855Tenn-16-25 LOCATION Coffee County, Tennessee  
light colored, subcultural phase  
SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551966 - 551973

Depth (in.)	Horizon	Soil class and particle diameter (mm) SCS											382 Cm	Coarse fragments 381		
		Total			Sand				Silt					Int. II (0.2-0.02)	Int. III (0.02-0.002)	(2-0.1)
		Sand (2-0.05) (0.05- 0.002)	Silt (< 0.002)	Clay (2-1)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Int. III (0.05-0.02)	Int. II (0.02-0.002)	Int. III (0.02-0.002)	Pct. of <= 2 mm			
0-9	Ap	66.2	19.2	5.1	3.9	1.8	2.0	1.8	49.3	19.7					30	
9-16	A3	65.4	21.0	5.2	3.5	1.6	1.7	1.6	48.8	19.1					17	

Soil Type: Dellrose cherty silt loam, eroded steep light colored subsoil phase.

Soil No.: S55Tenn-16-25

Location: Coffee County, Tennessee. 0.1 miles north of Stepp's store at Noah on U. S. Highway 41 at Texaco Service Station. 100 yards northeast of highway and 60 yards west of edge of woods near top of ridge.

Aerial photo 5G-77.

Vegetation and land use: Consists chiefly of ~~Lespedeza~~ and rag weeds.

Slope and land form: 26 percent.

Horizon and

Beltville

Lab. No.

Ap 551966	0 to 9 inches. Dark brown to brown (10YR 3/3 - 4/3) friable cherty silt loam; weak fine granular structure; contains many small roots; larger chert fragments comprising an estimated 2 percent of volume discarded.
A3 551967	9 to 16 inches. Brown (7.5YR 4/4 - 5/4) friable cherty silt loam; weak medium to fine granular and weak fine subangular blocky structure; contains a few black concretions 1.0 mm in diameter; larger chert fragments comprising an estimated 2 percent of volume discarded.
B1 551968	16 to 25 inches. Strong brown (7.5YR 5/6) friable cherty heavy silt loam; weak to moderate fine angular blocky structure; contains many black concretions and segregations 1.0 mm in diameter; a few yellowish red (5YR 5/6) clay skins on vertical and horizontal faces of pedes and chert fragments; larger chert fragments comprising an estimated 5 percent of volume discarded.
B21 551969	25 to 35 inches. Yellowish red (5YR 5/6) with a few light yellowish brown (10YR 6/4) variegations which are strong brown (7.5YR 5/6) when crushed; friable cherty light silty clay loam; moderate fine and medium subangular and angular blocky structure; common distinct clay skins on vertical and horizontal faces of pedes and chert fragments; many black stains and concretions 1.0 mm in diameter; contains an occasional small piece of weathered shale; larger chert fragments comprising an estimated 1 percent of volume discarded.
B22 551970	35 to 44 inches. Yellowish red (5YR 5/6) with many fine and medium distinct strong brown (7.5YR 5/6) and light yellowish brown (10YR 6/4) variegations; friable to firm cherty silty clay loam; moderate medium angular blocky structure; prominent clay skins on vertical and horizontal faces of pedes and chert fragments; contains many black concretions and stains 1.0 mm in diameter; occasional small piece of weathered shale; larger chert fragments comprising an estimated 2 percent of total volume discarded.
B23 551971	44 to 55 inches. Yellowish red (5YR 5/6) with common fine distinct strong brown (7.5YR 5/6) and light yellowish brown (10YR 6/4) variegations; friable to firm cherty silty clay loam; <u>moderate medium angular blocky structure</u> ; prominent yellowish red (5YR 4/6) clay skins on

horizontal and vertical faces of pedes and chert fragments; common black concretions 1.0 mm in diameter; occasional small piece of partly weathered greenish and black shale; larger chert fragments comprising an estimated 2 percent of total volume discarded.

B24 551972	55 to 62 inches. Yellowish red (5YR 5/6) with many fine faint to distinct strong brown (7.5YR 5/6) and light yellowish brown (10YR 6/4) variegations; friable to firm cherty silty clay loam; moderate medium and coarse angular blocky structure; prominent clay skins on horizontal and vertical faces of pedes and chert fragments; contains a few black concretions 1.0 mm in diameter and an occasional small piece of partly weathered greenish and black shale; larger chert fragments comprising an estimated 2 percent of total volume discarded.
---------------	--

B3 551973	62 to 74 inches. Yellowish red (5YR 5/6) with many fine distinct strong brown (7.5YR 5/6) and light yellowish brown (10YR 6/4) variegations; friable to firm cherty silty clay loam; moderate medium to coarse angular blocky structure; common distinct clay skins on vertical faces of pedes and chert fragments but few faint clay skins on horizontal faces; common black concretions 1.0 mm in diameter; occasional small pieces of partly weathered greenish and black shale; chert fragments range from 1/4 to 4 inches in diameter; fine chert of sand size gives the soil a gritty feel; larger chert fragments comprising an estimated 10 percent of the total volume discarded.
--------------	--

SOIL Dellrose charty silt loam, eroded steep SOIL Nos. 555Tenn-16-26 LOCATION Coffee County, Tennessee  
light colored subsoil phase

**SOIL SURVEY LABORATORY** Beltsville, Maryland

LAB. Nos. 551974 - 551981

Mt. = Montmorillonite, Chi. = chlorite, Vm. = Vermiculite, mica, Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite

**Relative amounts:** blank = not determined, dash = not detected,  
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Dellrose cherty silt loam, eroded steep light colored subsoil phase.

Soil No.: S55Tenn-16-26

Location: Coffee County, Tennessee. 2.0 miles north of Noah on Noah-Gnat Hill Road on the Russell Carden farm. 60 yards east of road at short fence at north of barn on west side of road and 40 yards north west of mulberry tree near edge of woods. Aerial photo 5G-118.

Vegetation and land use: Unimproved pasture of lespediza, sedge grass, crab grass and weeds.

Slope and land form: 28 percent.

Horizon and  
Beltsville  
Lab. No.

Ap  
551975 0 to 8 inches. Dark brown to brown (10YR 3/3 - 4/3) friable cherty silt loam; weak fine granular structure; contains many fine grass and weed roots; chert fragments on surface and in

A3  
551975 8 to 14 inches. Brown (7.5YR 4/4) friable cherty silt loam; weak to moderate fine granular to weak fine subangular blocky structure; contains an occasional black concretion 0.5 to 1.0 mm in diameter; larger chert fragments comprising an estimated 10 percent of the total volume discarded.

B1  
551976 14 to 22 inches. Strong brown to brown (7.5YR 5/6 - 4/4) friable cherty light silty clay loam; weak fine angular blocky structure; contains a few black concretions and segregations 1.0 mm in diameter; a few clay skins on vertical and horizontal faces of ped and chert fragments which are yellowish red (5YR 5/6) in color; larger chert fragments comprising an estimated 5 percent of the total volume discarded.

SOIL Dewey silt loam, undulating phase

SOIL Nos. 554Tenn-16-3 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland

LAB. Nos. 551303 - 551306

Depth (in.)	Horizon	1B1b Size class and particle diameter (mm) 3A1												3B2 Cm	Coarse fragments 3B1				
		Total			Sand				Silt						2A2 Pct.	2-19 Pct. of <= 76mm			
		Sand (2-0.05) (0.05- 0.002)	Silt (< 0.002)	Clay (< 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Int. III (0.05-0.02)	Int. II (0.02- 0.002)	(2-0.1)	(0.2-0.02)						
		Pct. of <= 2 mm																	
0-2	A1	70.5	11.4	2.0	2.2	1.2	4.5	8.2	44.2	37.6					4				
2-8	A2	70.0	13.9	2.0	1.9	1.0	3.8	7.4	43.3	36.7					2				
13-32	B2	47.4	42.1	0.5	0.5	0.4	2.5	6.6	33.5	22.6					-				
32+	C	31.2	57.8	0.2	0.5	0.3	3.0	7.0	22.2	18.7					-				
Depth (in.)	6A1s Organic carbon, Pct.	Nitrogen Pct.	C/N	Carbonate as CaCO <sub>3</sub> Ext. iron as Fe <sub>2</sub> O <sub>3</sub> Pct.	Ext. iron as Fe <sub>2</sub> O <sub>3</sub> Pct.	Bulk density			4D1 COLE	Water content			4C1 WRD In/In	DM					
						4A1e ½ bar	4A1h Oven dry	g/cc		4B1c ½ bar	4B2 15 bar	Pet.		8C1c (1:1)	8C1a (1.1)				
						g/cc	g/cc	g/cc		Pet.	Pet.	Pet.		KCl	H <sub>2</sub> O				
0-2	1.99	0.118	17			1.6										5.6			
2-8	1.00	0.073	14			1.9										5.0			
13-32	0.13	0.039				5.0										4.7			
32+	0.06	0.046				7.1										4.8			
Depth (in.)	Extractable bases 5B1a					6A1s Ca Mg	6P2a Na	6Q2a K	Ext. acidity	CEC			6G1d Ext. Al	Ratios to clay			8D3 Ce/Mg	Base saturation	
	6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum					5A3e Sum cation				CEC Sum	Ext. iron	15-bar water		5C3 Sum cation Pct.	5C1 Sum NH <sub>4</sub> OAc Pct.
	meg/100 g																		
0-2	3.0	1.0	tr.	0.4		6.5	10.9										40		
2-8	0.8	0.2	tr.	0.2		6.1	7.3										16		
13-32	0.3	1.1	tr.	0.2		11.9	13.5										12		
32+	0.7	1.3	tr.	0.2		16.5	18.7												
Depth (in.)	Clay Fraction Analysis 7A1b-d																		
	Mt.	Chl.	Vm.	Mi.	Int	Qtz.	Id.	Gibbsite											
	7A2 X-ray					7A3													

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, Mi. = mica,  
Int. = interstratified layer, Qtz. = quartz, Id. = kaolinite

Relative amounts: blank = not determined, dash = not detected,  
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Dewey silt loam, undulating phase.

Soil No.: 854Tenn-16-3

Location: Coffee County, Tennessee. 2.5 miles east of Summitville-Mopewell Road on gravel road to Calvin Williams farm at Mud Creek, then north 0.1 mile on side road to small wood on west side of road. 60 feet north west of power pole with transformer and 20 feet west of road. Aerial photo 6G-175.

Vegetation and land use: Woods consisting chiefly of red oaks.

Horizon and  
Beltsville  
Lab. No.

O1, O2 1 to 0 inches. Forest litter and leaf mold.  
Not Sampled

A1 0 to 2 inches. Brown (10YR 5/3 - 4/3) very friable silt loam; weak fine crumb structure.  
151303

A2 2 to 8 inches. Yellowish brown (10YR 5/4) very friable silt loam; moderate medium crumb to weak fine subangular blocky structure.  
151304

B1 8 to 13 inches. Strong brown (7.5YR 5/8) friable silty clay loam; weak fine to medium sub-angular blocky structure.  
Not Sampled

B2 13 to 32 inches. Yellowish red (5YR 4/6) or red (2.5YR 4/6) firm silty clay loam; moderate medium subangular structure; finely divided chert fragments are common and increase with depth.  
151305

C 32 inches plus. Red to dark red (2.5YR 4/8 - 3/6) mottled or splotched with yellow (10YR 7/6); firm silty clay; moderate medium angular blocky structure; contains finely divided chert fragments and angular chert pieces.  
151306

SOIL Dewey silt loam, undulating phase SOIL Nos. 554/Tenn-16-14 LOCATION Coffee County, Tennessee

**SOIL SURVEY LABORATORY** Beltsville, Maryland

SOIL No. 854 Penn-16-14

LOCATION Coffee County, Tennessee

1AB Nos 551347 - 551350

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, m. = mica,  
Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite

**Relative amounts:** blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Dewey silt loam, undulating phase.

Soil No.: S54Tenn-16-14

Location: Coffee County, Tennessee. Small wooded area 100 yards south of Pleasant Knoll Church at intersection of gravel roads. 60 yards west of intersection to large cedar tree at edge of wooded area and 25 feet south of road at cedar tree. Aerial photo 7G-44.

Horizon and  
Beltsville  
Lab. No.

O1, O2 1 to 0 inches. Forest litter and leaf mold.  
Not Sampled

A1 0 to 2 inches. Brown (10YR 5/3 - 4/3) very friable silt loam; weak fine crumb structure.  
551347

A2 2 to 8 inches. Yellowish brown (10YR 5/4) very friable silt loam; moderate medium crumb or  
551348 weak fine subangular blocky structure.

B1 8 to 14 inches. Strong brown (7.5YR 5/8) friable silty clay loam; weak fine to medium sub-  
Not Sampled angular blocky structure.

B2 14 to 34 inches. Yellowish red (5YR 4/6) or red (2.5YR 4/6) firm silty clay loam; moderate  
551349 medium subangular blocky structure.

C 34 inches plus. Red or dark red (2.5YR 4/8 - 3/6) moderately cherty firm silty clay; moderate  
551350 medium angular blocky structure.

SOIL Dickson silt loam, undulating phase SOIL Nos. 554Tenn-16-4 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland

LAB. Nos. 551307 - 551311

Depth (in.)	Horizon	Size class and particle diameter (mm) 3A1												3B2 Cm	Coarse fragments 3B1			
		Total			Sand			Silt			Int. III (0.05-0.02) (0.02-0.002)	Int. II (0.02-0.01) (2-0.1)	Pct. of < 2 mm					
		Sand (2-0.05) (0.05- 0.002)	Silt (< 0.002)	Clay (2-1)	Very coarse (1-0.5)	Coarse (0.5-0.25)	Medium (0.25-0.1)	Fine (0.1-0.05)	Very fine (0.05-0.02)	Int. III (0.05-0.02) (0.02-0.002)	Int. II (0.02-0.01) (2-0.1)							
0-1	A1	72.1	10.9	1.3*	2.2	1.6	6.0	5.9		46.0	35.8				tr.			
1-6	A2	73.8	12.9	0.7	1.0	0.8	4.8	6.0		48.2	35.0				tr.			
11-23	B2	69.6	20.4	1.2	0.8	0.6	3.0	4.4		49.1	27.1				tr.			
27-48	Bm	68.0	21.8	0.8	0.7	0.5	3.2	5.0		46.5	28.8				tr.			
48+	D	54.1	32.9	1.7	1.0	0.7	3.9	5.7		37.0	25.7				tr.			
Depth (in.)	6A1a Organic carbon	Nitrogen Pct.	C/N	Carbonate as CaCO <sub>3</sub> Pct.	Ext. iron as Fe2O3 Pct.	4A1a g/cc	4Ah g/cc	4Alh g/cc	4D1 COLE	Water content			4C1 WRD in/in	pH				
										4B1c 1/4 bar	4B2 15 bar			8C1c (1:1)	8C1a (1:1)			
										Pct.	Pct.	Pct.		KCl	H <sub>2</sub> O			
0-1	5.0	0.193	26			1.4										4.0		
1-6	1.03	0.064	16			1.7										4.3		
11-23	0.16	0.032				2.5										4.5		
27-48	0.08	0.018				2.2										4.6		
48+	0.05	0.016				4.5										4.7		
Depth (in.)	Extractable bases 5B1a					6H1a Ext. acidity	CEC		6G1d Ext. Al	Ratios to clay			8D3 Ca/Mg	Base saturation				
	6N2d Cs	6O2b Mg	6P2a Na	6Q2a K	Sum		SAs <sub>3</sub> Sum cations			CEC Sum	Ext. iron	15-bar water		5C3 Sum cations Pct.	5C1 NH <sub>4</sub> OAc Pct.			
Depth (in.)	Clay Fraction Analysis 7A1b-d												Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, Mi. = mica, Int. = interstratified layer, Qtz. = quartz, Kl. = kaolinite Relative amounts, blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.					
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Il.	Gibbsite										
									7A2 X-ray	7A3								

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, Mi. = mica,  
Int. = interstratified layer, Qtz. = quartz, Kl. = kaoliniteRelative amounts, blank = not determined, dash = not detected,  
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

a Undecomposed organic matter in sand fraction.

Soil Type: Dickson silt loam, undulating phase.

Soil No.: 854Tenn-16-4

Location: Coffee County, Tennessee. 1.5 miles south of Hopewell Cemetery on Summitville-Hopewell road to gravel side road marked with T. C. Barrel mail box with red milk can for base. 100 yards east on gravel road and 25 feet south of road in woods. Aerial photo 6G-127.

Horizon and  
Beltsville  
Lab. No.

01, 02 1 to 0 inches. Forest litter and leaf mold.  
Not Sampled

A1 0 to 1 inch. Grayish brown (10YR 5/2) very friable silt loam; weak fine crumb structure.  
551307

A2 1 to 6 inches. Light yellowish brown or yellowish brown (10YR 6/4 - 5/4) very friable silt loam; weak fine to medium subangular blocky structure.  
551308

B1 6 to 11 inches. Light yellowish brown or yellowish brown (10YR 6/4 - 5/4) very friable silt loam; weak medium to coarse angular blocky structure.  
Not Sampled

B2 11 to 23 inches. Light yellowish brown or yellowish brown (10YR 6/4 - 5/4) (slightly paler than layer above) very friable silt loam; weak to moderate medium angular and subangular blocky structure.  
551309

B3 23 to 27 inches. Mottled light yellowish brown, yellowish brown (10YR 6/4 - 5/4) and gray friable silt loam; weak to moderate medium angular and subangular blocky structure; many medium prominent mottles; brown concretion averaging about 5 mm generally present.  
Not Sampled

Bm 27 to 48 inches. Mottled yellowish brown, yellow and gray compact in place but breaks or crushes to friable silt loam; strong medium angular blocky to coarse platy structure; many medium prominent mottles.  
551310

D 48 inches plus. Mottled yellow, gray, and red firm silty clay loam or silty clay; generally moderately chart; strong medium to coarse angular blocky structure; many medium prominent mottles which become more pronounced with depth.  
551311

SOIL Dickson silt loam, undulating phase SOIL Nos. 551Tenn-16-10 LOCATION Coffee County, TennesseeSOIL SURVEY LABORATORY Beltsville, MarylandLAB.-NOS. 551330 - 551334

Depth (in.)	Horizon	181b												3B2 Cm	Coarse fragments 3B1			
		Total			Sand			Silt			Int. III (0.2-0.02) (0.02- 0.002)		Int. II (0.2-0.02) (2-0.1)		Coarse fragments 3B1			
		Sand (2-0.05) (0.05- 0.002)	Silt (< 0.002)	Clay (2-1)	Very coarse (1-0.5)	Coarse (0.5-0.25)	Medium (0.25-0.1)	Fine (0.1-0.05)	Very fine (0.05-0.02)	Int. III (0.2-0.02) (0.02- 0.002)	Pct. of < 2 mm	Int. II (0.2-0.02) (2-0.1)	Pct. of < 2 mm	Pct. of < 2 mm	Pct. of < 2 mm	Pct. of < 76mm		
0-1	A1	71.7	8.6	2.1 <sup>a</sup>	2.5 <sup>b</sup>	1.5 <sup>c</sup>	4.7	8.9		44.2	39.2				2			
1-6	A2	75.2	12.1	1.3	1.1	0.7	2.2	7.4		51.3	32.7				7			
11-24	B2	66.9	22.4	1.6	0.9	0.5	1.4	6.3		46.9	27.2				10			
28-46	B1	71.1	17.0	1.3	0.9	0.5	1.7	7.5		49.6	30.1				10			
46+	D	49.9	36.9	1.2	1.1	0.7	2.0	8.2		34.7	24.7				12			
Depth (in.)	0A1a Organic carbon	Nitrogen Pct.	C/N Pct.	Carbonate as CaCO <sub>3</sub> Pct.	Ext. Iron as Fe2O3 Pct.	4D1 COLE	Bulk density			4C1 WRD	Water content			4C1 in/in	pH			
							4A1e ½ bar	4A1h Oven dry	g/cc		4B1c ½ bar	4B2 15 bar			8C1c (1:1)	8C1a (1:1)		
									g/cc						KCl	H <sub>2</sub> O		
0-1	5.0	0.180	28		1.2											4.4		
1-6	1.53	0.081	19		1.5										4.6			
11-24	0.23	0.031			2.6										4.4			
28-46	0.13	0.013			2.7										4.4			
46+	0.11	0.022			5.1										4.5			
Depth (in.)	Extractable bases 5B1a					6G1a Ext. acidity	CEC		6G1d Ext. Al	Ratios to clay			8D3 Ca/Mg	Base saturation				
	6N2d Ca	6O2b Mg	6P2a Na	6Q2s K	Sum		SA3a Sum cation			CEC Sum	Ext. iron	15-bar water		5C3 Sum cation Pct.	5C1 NH <sub>4</sub> OAc Pct.			
0-1	2.2	0.7	tr.	0.3		13.7	15.9							19				
1-6	0.3	0.2	0.1	0.2		7.4	8.2							10				
11-24	0.2	0.2	0.1	0.2		9.1	9.8							7				
28-46	0.2	tr.	0.1	0.1		7.7	8.1							5				
46+	0.1	0.5	tr.	0.1		14.2	14.9							5				
Depth (in.)	Clay Fraction Analysis 7A1b-d												7A2 X-ray	Mt. = Montmorillonite, Chi. = chlorite, Vm. = Vermiculite, Mi. = mica, Int. = interstratified layer, Qtz. = quartz, Kl. = kaolinite				
	Mt.	Chi.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite						Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.				
														a Undecomposed organic matter in sand fraction.				

Soil Type: Dickson silt loam, undulating phase.

Soil No.: S54Tenn-16-10

Location: Coffee County, Tennessee. 0.8 mile west of Blanton's Chapel on Black Top Road 1. 50 yards west of concrete culvert and 25 feet north of black top road. Aerial photo 5G-110.

Vegetation and land use: Mixed hardwood forest.

Slope and land form: 3 percent.

Horizon and

Beltsville

Lab. No.

O1, O2 1 to 0 inches. Forest litter and leaf mold.  
Not Sampled

A1 0 to 1 inch. Grayish brown (10YR 5/2) very friable silt loam; weak fine crumb structure.  
551330

A2 1 to 6 inches. Light yellowish brown or yellow brown (10YR 6/4 - 5/4) very friable silt loam;  
551331 weak fine to medium subangular blocky structure.

B1 6 to 11 inches. Light yellowish brown or yellowish brown (10YR 6/4 - 5/4) very friable silt  
Not Sampled loam; weak medium to coarse angular blocky structure.

B2 11 to 24 inches. Light yellowish brown or yellowish brown (10YR 6/4 - 5/4) (slightly paler  
551332 than layer above) very friable silt loam; weak to moderate medium angular and subangular blocky structure.

B3 24 to 28 inches. Mottled light yellowish brown, yellowish brown (10YR 6/4 - 5/4) and gray;  
Not Sampled weak to moderate medium angular and subangular blocky structure; brown concretions averaging  
about 5 mm. in diameter; common medium distinct mottles.

Bm 28 to 46 inches. Mottled yellowish brown, yellow and gray, compact in places but breaks or  
551333 crushes to friable silt loam with strong medium angular blocky to coarse platy structure; many  
medium prominent mottles.

D 46 inches plus. Mottled yellow, gray, and red moderately cherly firm silty clay loam; strong  
551334 medium to coarse angular blocky structure; many medium prominent mottles.

SOIL SURVEY LABORATORY Lincoln, Nebr. November 1958

SOIL TYPE Dulac LOCATION Henderson County, Tennessee  
silt loam

SOIL NOS. S57Tenn-39-9 LAB. NOS. 7773-7780

DEPTH INCHES	HORIZON	Perc.	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)							3A1	2A2	TEXTURAL CLASS
			VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY			
0-7	A <sub>p</sub>	0.4a	1.9a	2.1a	5.0a	6.3a	73.8	10.5	48.7	34.5	-	sil
7-14	B <sub>2</sub> 1	0.1a	1.0a	1.1a	1.8a	2.2a	68.2	25.6	30.5	40.9	-	sil
14-21	B <sub>2</sub> 2	0.1a	1.0a	1.1a	1.8a	2.3a	66.2	27.5	28.8	40.7	Tr.	sicl

Described by E. C. Sease, Robbie Flowers,  
Wiley Mangrum, and Lewis Dungan.

Soil type: Dulac silt loam

Soil No.: 857Ienn-39-9

Date: May 20, 1957

Area: Henderson County, Tennessee

Location: About 15 miles east of Lexington near Crowell Chapel Church. About 150 feet west of church and 20 feet south of gravel road (see photo No. 2F-142).

Present land use: Cultivated field, corn in 1957.

Lincoln

Lab.

No. Horizon Depth

7773 A<sub>p</sub> 0-7 inches Brown to dark brown (10YR 4/3) silt loam; weak fine granular structure; very friable; a little of the subsoil has recently been plowed into this layer and occurs in streaks; abrupt smooth boundary.

7774 B<sub>21</sub> 7-14 inches Brown to dark brown (7.5YR 4/4) silt loam; weak medium subangular blocky structure; friable; very few clay skins; clear smooth boundary.

7775 B<sub>22</sub> 14-21 inches Yellowish brown (10YR 5/4) to dark yellowish brown coarse silty clay loam; moderate medium subangular blocky structure; firm; more clay skins than above horizon; gradual smooth boundary.

7776 B<sub>3ml</sub> 21-32 inches Dark brown (7.5YR 4/4) with a few fine faint mottles of dark reddish brown (5YR 3/3) and pale brown (10YR 6/3) silt loam; moderate medium subangular and angular blocky structure; friable; many vertical clay skins; many soft dark brown (7.5YR 3/2) and black (7.5YR 2/0) concretions; gradual smooth boundary.

7777 B<sub>3m2</sub> 32-39 inches Mottled reddish brown (5YR 4/3), pale brown (10YR 6/3),

OIL TYPE Dulac ..... LOCATION Henderson County, Tennessee  
 silt loam

SOIL NOS. 857Tenn-39-10 LAB. NOS. 7781-7787

DEPTH INCHES	HORIZON	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1										TEXTURAL CLASS
		1B1a 2.1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	2A2 0.2-0.002	2A2 0.02-0.002	> 2	
0-6	A <sub>p</sub>	0.8a	2.4a	2.4a	4.9a	6.4a	75.9	7.2	54.1	30.8	Tr.	sil
6-13	B <sub>21</sub>	0.3a	1.2a	1.0a	1.6a	2.3a	70.9	22.7	32.0	42.0	Tr.	sil
13-18	B <sub>22</sub>	0.4a	1.1a	0.9a	1.6a	2.3a	64.4	29.3	27.9	39.6	Tr.	sycl
18-22	B <sub>3ml</sub>	0.4a	1.4a	1.3a	2.3a	3.0a	62.7	28.9	29.4	37.5	Tr.	sycl
22-31	B <sub>3m2</sub>	0.6a	2.2a	2.2a	4.1a	6.0a	56.6	28.3	34.7	30.1	-	sycl
31-39	B <sub>3m3</sub>	1.0a	2.9a	2.9a	5.1a	8.0a	52.3	27.8	33.4	29.5	-	cl/sycl
39-51	D <sub>l</sub>	1.1a	4.2a	4.7a	8.2a	13.4a	37.8	30.6	30.7	24.8	-	cl
pH		ORGANIC MATTER			6C1a			MOISTURE TENSIONS				
8C1a		6A1a	6B1a		Free Iron			CaCO <sub>3</sub> equiv. equiv. equiv.	1/10 ATMOS.	1/3 ATMOS.	15 ATMOS.	
	1.5	1:10	ORGANIC CARBON	NITRO- GEN	C/N			%	%	%	%	
11			%	%								
5-14		0.40	0.062	8	1.4							

Déscribed by E. C. Sease, Robbie Flowers,  
Wiley Mangrum, and Lewis Dungan.

Soil type: Dilac silt loam

Soil No., : S57Tenn-39-10

Date: May 21, 1957

Area: Henderson County, Tennessee

Location: Two miles northeast of Sardis on Pipkin farm, 200 yards east of gravel road and 250 yards southeast of farmhouse in sericea field on ridgetop (see photo No. 2F-100).

Present land use: Sericea field which in 1956 was in cotton.

Sampling party: E. C. Sease, Robbie Flowers, Wiley Mangrum, and Lewis Dungan.

Lincoln

Lab.

No. Horizon Depth

7781	A <sub>p</sub>	0-6 inches	Yellowish brown (10YR 5/4) silt loam; weak fine granular and medium subangular blocky structure; very friable; abrupt smooth boundary.
7782	B <sub>21</sub>	6-13 inches	Dark yellowish brown (10YR 4/4) to brown to dark brown (7.5YR 4/4) fine silt loam; moderate medium subangular blocky structure; firm; very few clay skins; gradual smooth boundary.
7783	B <sub>22</sub>	13-18 inches	Dark yellowish brown (10YR 4/4) to brown to dark brown (7.5YR 4/4) coarse silty clay loam; moderate medium subangular blocky structure; firm; clay skins present; gradual smooth boundary; old root channels through this layer.
7784	B <sub>3m1</sub>	18-22 inches	Mottled dark yellowish brown (10YR 4/4 and 10YR 3/4), and pale brown (10YR 6/3); mottles are common, fine, faint; fine silt loam; weak medium subangular blocky structure; firm; a few soft dark brown concretions; gradual smooth boundary.
7785	B <sub>3m2</sub>	22-31 inches	Mottled reddish brown (5YR 4/3), light brownish gray (2.5Y 6/2), and yellowish red (5YR 5/8); mottles are many, coarse, prominent; silt loam; platy structure at top of large columns; columns break to strong medium angular blocks; very firm; many clay skins and dark brown and black concretions; streaks of gray silt and clay between columns; gradual smooth boundary.
7786	B <sub>3m3</sub>	31-39 inches	Reddish brown (5YR 4/3) with many coarse prominent mottles of light brownish gray (2.5Y 6/2) and brown to dark brown (7.5YR 4/4); silt loam; very weak coarse angular blocky structure; abrupt smooth boundary; many clay skins and dark brown concretions.
7787	D <sub>1</sub>	39-51 inches	Dark red (2.5YR 3/6) with many coarse prominent mottles and streaks of strong brown (7.5YR 5/8), dark gray (2.5Y 4/0), and light gray to gray (2.5Y 6/0); sandy clay; massive; very firm.

Remarks: Colors given are for moist soil unless otherwise stated. This is the eroded gently sloping phase of Dilac.

soil Dunmore silt loam

SOIL Nos. S53Tenn-5-1 LOCATION Blount County, Tennessee

**SOIL SURVEY LABORATORY Beltsville, Maryland**

LAB. Nos. 53695-53699

Soil Type: Durmore silt loam

Soil No.: 853Tenn-5-1

Location: Blount County, Tennessee. 1 mile northeast of Providence.

Vegetation and land use: Unimproved pasture. Chiefly broomsedge and lespediza.

Horizon and  
Beltsville  
Lab. No.

Ap 53695 0 to 7 inches. Brown (10YR 5/3) to yellowish brown (10YR 5/4) friable silt loam; moderate medium granular structure. Rapid gradation to;

B1 53696 7 to 13 inches. Yellowish red (5YR 5/8) firm silty clay with streaks of yellowish brown extending from surface soil. Well developed medium blocky structure. Structural interfaces coated with brownish yellow. Rapid gradation to;

B21 53697 13 to 22 inches. Yellowish red very firm silty clay; strongly developed medium to coarse blocky structure.

B22 53698 22 to 26 inches. Yellowish red (5YR 5/8) very firm silty clay; strongly developed medium to coarse blocky structure. Some faint and distinct brownish yellow mottles.

C 53699 26 to 50 inches plus. Yellowish red (5YR 5/8) very firm silty clay. Numerous prominent brownish yellow mottles. Strongly developed medium to coarse blocky structure.

**Dunmore silt loam**

SOIL Nos. 853Tenn-5-2 LOCATION Blount County, Tennessee

**SOIL SURVEY LABORATORY Beltsville, Maryland**

LAB. Nos. 53700-53704

Soil Type: Dammore silt loam

Soil No.: S53Tenn-5-2

Location: Blount County, Tennessee. 1 mile northeast of Prospect.

Vegetation and land use: Idle. Weeds and some lespediza. Corn last year.

Horizon and  
Beltsville  
Lab. No.

Ap 0 to 6 inches. Yellowish brown (10YR 5/4) friable silt loam; weak medium granular structure.  
53700

A3 & B1 6 to 10 inches. Strong brown (7.5YR 5/8) with streaks of yellowish brown moderately friable  
53701 silty clay loam. Yellowish brown streaks are chiefly along old root channels. Moderately  
developed fine and medium subangular blocky structural aggregates. Sharp gradation to;

B21 10 to 18 inches. Yellowish red (5YR 5/8) very firm silty clay; strongly developed medium to  
53702 coarse blocky structure.

B22 18 to 26 inches. Yellowish red (5YR 5/8), faintly mottled with brownish yellow, very firm  
53703 silty clay. Strongly developed coarse subangular blocky structure.

C 26 to 50 inches plus. Yellowish red (5YR 5/8), with numerous distinct brownish yellow mottles,  
53704 very firm silty clay. Very strongly developed coarse subangular blocky structure.

SOIL SURVEY LABORATORY  
Lincoln, Nebraska

LOCATION Hardin County, Tennessee

SOIL TYPE Egarn silty clay loam

LAB NOS. 12335 - 12343

SOIL NOS. S59Tenn-36-4

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1Bla						PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)			3A1			TEXTURAL CLASS		
			VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.100	VERY FINE SAND 0.10-0.050	SILT 0.05-0.002	CLAY <0.002	INTERNATIONAL		2A2					
			II	III			0.2-0.02	0.02-0.002	> 2								
12335	0-5	Apl	<0.1	0.3a	0.2a	0.9a	1.5a	58.2	38.9	12.7	47.6	-	scl				
12336	5-8	Ap2	<0.1	0.2a	0.2a	1.0a	1.9a	52.8	43.9	12.2	43.2	-	sic				
12337	8-13	Alb	0.6	1.3	0.7b	1.0b	1.6a	51.5	43.3	13.1	40.6	-	sic				
12338	13-22	C1	<0.1	0.1a	0.1a	1.3a	1.8a	50.1	46.6	13.4	39.4	-	sic				
12339	22-33	C2	<0.1	0.2a	0.3a	6.4b	3.1b	46.6	43.4	16.9	37.0	-	sic				
12340	33-49	C3	<0.1	<0.1	0.1b	1.1b	5.0b	52.4	41.4	24.0	34.0	-	sic				
12341	49-58	Du1	<0.1	<0.1	0.1c	5.7	18.6	44.7	30.9	43.7	24.5	-	cl				
12342	58-75	Du2	<0.1	<0.1	0.3e	13.4	25.8	34.5	26.0	54.7	17.0	-	1				
12343	75-91	Du3	<0.1	0.1c	0.5c	31.6	22.4	23.7	21.7	57.4	12.1	-	scl				
pH			ORGANIC MATTER			6C1a Free Ironas Fe <sub>2</sub> O <sub>3</sub>		BULK DENSITY								4B2	
			8C1a H <sub>2</sub> O 1:1		6A1a ORGANIC CARBON %		6B1a NITROGEN %		Field State 4B4 Water		30-Cm. 4Ala Water		O.D. 4Alc g/cc		15-Bar Water %		
12335	5.7				1.36	0.134	10	3.5	21.1	1.50	24.5	1.47	1.58	16.5			
12336	5.1				1.03	0.091	11	3.8	23.8	1.52	24.4	1.50	1.61	19.1			
12337	5.3				1.16	0.090	13	3.7	22.2	1.57	24.7	1.51	1.66	18.4			
12338	4.9				0.98	0.093	10	3.9	24.2	1.55	25.1	1.52	1.67	19.9			
12339	5.1				1.03	0.088	12	3.6	21.2	1.63			1.72	18.8			
12340	5.2				0.60			3.7	21.0	1.63			1.72	17.5			
12341	5.3				0.38			2.9						13.6			
12342	5.2				0.30			2.6						11.5			
12343	5.4				0.20			2.2						9.8			
5A1a CATION EXCHANGE CAPACITY NH <sub>4</sub> OAC			EXTRACTABLE CATIONS 5B1a						5C1 Base Sat. % NH <sub>4</sub> OAc on Sum Cations me/100g		5C3 Base Sat. % Ext. Bases Cations me/100g		5B1a Sum Ext. Bases Cations me/100g		5A3a Sum Ext. Bases Cations Ca/Mg		8D3
12335	21.6	14.1	1.5	9.8	0.1	0.2	74	62	15.9	25.7	9.4						
12336	22.6	9.6	1.3	19.7	0.1	0.2	50	36	11.2	30.9	7.4						
12337	23.8	13.8	1.4	17.8	0.1	0.2	65	46	15.5	33.3	9.8						
12338	22.6	9.2	1.3	21.8	0.1	0.2	48	33	10.8	32.6	7.1						
12339	22.7	11.5	1.5	18.2	0.1	0.2	58	42	13.3	31.5	7.7						
12340	19.1	11.4	1.3	13.8	0.1	0.2	68	48	13.0	26.8	8.8						
12341	15.4	9.0	1.0	11.5	0.1	0.2	67	47	10.3	21.8	9.0						
12342	13.5	7.0	1.0	10.8	0.1	0.1	61	43	8.2	19.0	7.0						
12343	10.9	6.1	0.8	8.1	<0.1	0.1	64	46	7.0	15.1							

- a. Many Fe-Mn? bearing aggregates.
- b. Few Fe-Mn? bearing aggregates.
- c. Common mica fragments.

Soil type: Egan silty clay loam

Soil No. : 859Tenn-364

Location: Hardin County, Tennessee,  $3\frac{1}{2}$  miles northwest of Savannah, on Coffee Landing Road, on J. D. Dodd farm, half way between Tennessee River and Coffee Landing Road. Photo AIK-6F-164(1955).

Vegetation and Use: Lespedeza and Johnson grass pasture.

Slope and Land Form: Nearly level to gently sloping bottom land, 2-3 percent slope. Narrow low lying ridge about 50 yards wide. Small shallow slough on the east and west sides. Elevation 375 ft.

Drainage and Permeability: Moderately well to well drained. Surface runoff slow. Permeability slow.

Parent Material: Sediments derived largely from uplands of limestone origin.

Samples collected by: Edwood Pedersen, George Phibbs, T. R. Love, W. H. Proffitt, E. C. Sease - October 20, 1959.

Profile described by: W. H. Proffitt, T. R. Love, and E. C. Sease - October 20, 1959.

Horizons and

Lincoln

Lab. No. Depth

Apl 12335	0 to 5 inches	Dark brown (10YR 3/3) silty clay loam; moderate fine and medium granular structure; friable to firm; many small roots; clear smooth boundary.
Ap2 12336	5 to 8 inches	Dark brown (10YR 3/3) to brown (10YR 4/3) silty clay loam; weak medium and fine subangular blocky structure; firm; common small roots; clear smooth boundary.
Alb 12337	8 to 13 inches	Very dark grayish brown (10YR 3/2) silty clay, with few fine faint mottles of dark brown (10YR 3/3) and dark grayish brown (10YR 4/2); moderate medium angular and subangular blocky structure; firm; slightly plastic when wet; common small roots; clear smooth boundary.
Cl 12338	13 to 22 inches	Dark brown (10YR 3/3) interior of peds and dark grayish brown (10YR 4/2) on ped faces, silty clay or clay; moderate to strong medium prismatic structure breaking into strong medium angular blocky structure; firm; few small roots; few tubular pores; diffuse smooth boundary.
C2 12339	22 to 33 inches	Very dark grayish brown (10YR 3/2) silty clay or clay interior of peds; dark grayish brown (10YR 4/2) on ped surfaces; strong medium prismatic structure breaking into strong medium angular blocky structure; firm to very firm; few small roots; few small holes or pores; clear wavy boundary.
C3 12340	33 to 49 inches	Dark brown (10YR 3/3) silty clay or clay, with few fine faint mottles of grayish brown (10YR 5/2) and brown (10YR 4/3); moderate medium prismatic structure breaking into moderate medium angular and subangular blocky structure; firm, common small holes or pores; clear smooth boundary.
Dal 12341	49 to 58 inches	Brown to dark brown (10YR 4/3-3/3) silty clay loam; with common fine faint light brownish gray (10YR 6/2) and grayish brown (10YR 5/2) mottles; weak coarse prismatic structure; friable to firm; grayish brown (10YR 5/2) and dark grayish brown (10YR 4/2) silt coatings on peds; clear smooth boundary.
Du2 12342	58 to 75 inches	Brown to dark brown (10YR 4/3-3/3) clay loam or loam; common fine and medium faint grayish brown (10YR 5/2) to light brownish gray (10YR 6/2) mottles; massive, friable; common small pores 0.25 mm to 0.50 mm in diameter; clear smooth boundary.
Du3 12343	75 to 91 inches	Brown to dark brown (10YR 4/3-3/3) fine sandy loam with common fine and medium faint mottles of light brownish gray (10YR 6/2) massive; very friable; common mica flakes and a few black specks 0.5 mm in diameter.

Remarks: Colors given are for moist soil. An occasional gravel ranging from 1 to 5 cm. in diameter distributed throughout the profile. Roots below the Apl are chiefly along the structure breaks.

SOIL SURVEY LABORATORY  
Lincoln, Nebraska

LOCATION Hardin County, Tennessee

SOIL TYPE Exam silty clay loam

LAB NOS. 12359 - 12367

SOIL NOS. S59Tenn-36-7

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a		PARTICLE SIZE DISTRIBUTION (in mm.)					3A1			TEXTURAL CLASS	
			VERY COARSE SAND 2.1	COARSE SAND 1.0-5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.02	<0.002	INTERNATIONAL	2A2			
			II	III	>2									
12359	0-7	Ap	<0.1	<0.1	0.1a	0.5a	2.2b	64.6	32.6	21.8	45.3	-	sicl	
12360	7-15	Alb1	<0.1	<0.1	<0.1	0.7c	3.5a	54.8	41.0	20.4	38.4	-	sic	
12361	15-22	Alb2	<0.1	<0.1	0.1c	0.8c	5.9b	55.0	38.2	27.1	34.4	-	sicl	
12362	22-31	C1	<0.1	<0.1	0.1c	0.8b	9.1	53.9	36.1	32.7	30.9	-	sicl	
12363	31-42	C2	<0.1	<0.1	<0.1	0.4b	4.9	55.1	39.6	26.7	33.6	-	sicl/sic	
12364	42-51	C3	<0.1	<0.1	<0.1	0.4b	3.4	55.3	40.9	23.5	35.5	-	sic	
12365	51-70	C4	<0.1	<0.1	<0.1	0.3b	3.2	55.2	41.3	20.7	37.9	-	sic	
12366	70-86	C5	<0.1	<0.1	0.1b	0.4b	2.4	55.0	42.1	19.9	37.8	-	sic	
12367	86-96+	C6	<0.1	0.1	0.1d	0.3	4.2	56.8	38.5	26.9	34.3	-	sicl	
B1H			ORGANIC MATTER			6C1a	BULK DENSITY							
	8C1a $\text{H}_2\text{O}$ 1:1		6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Free Irones $\text{Fe}_2\text{O}_3$ %	Field 4B4 Water %	State 4Ala g/cc	30-Cm. 4B3 Water %	0.D. 4Alc g/cc	4B2			
12359	5.9			1.57	0.140	11	3.0	22.7	1.47	25.6	1.44	1.55	13.4	
12360	5.5			1.43	0.119	12	3.4	23.7	1.53	24.1	1.52	1.61	17.4	
12361	5.7			1.08	0.091	12	3.3	20.2	1.63	20.7	1.62	1.73	16.3	
12362	5.6			0.79	0.070	11	3.2	20.0	1.64	21.0	1.62	1.74	15.6	
12363	5.5			0.76			3.4	21.2	1.62	22.5	1.59	1.72	16.9	
12364	5.4			0.69			3.6	21.7	1.61	23.7	1.57	1.71	17.3	
12365	5.4			0.65			3.5	21.4	1.61	23.8	1.57	1.69	18.2	
12366	5.4			0.60			3.7						18.1	
12367	5.5			0.44			3.6						16.7	
5A1a CATION EXCHANGE CAPACITY $\text{NH}_4\text{OAc}$			EXTRACTABLE CATIONS 5B1a			5C1	5C3	5B1a	5A3a	8D3				
	6R2b Ca	6O2b Mg	6F1a H	6P2a Na	6O2a K	Base Sat. % $\text{NH}_4\text{OAc}$	Base Sat. % on Sat.	Sum Ext. Bases Cations me/100g	Sum Ext. Bases Cations me/100g	Ca/Mg				
12359	18.9	13.6	1.8	10.4	<0.1	0.2	82	60	15.6	26.0	7.6			
12360	24.7	16.5	1.6	15.1	<0.1	0.2	74	55	18.3	33.4	10.3			
12361	22.8	15.6	1.6	12.9	<0.1	0.2	76	57	17.4	30.3	9.8			
12362	20.9	14.3	1.3	11.1	<0.1	0.2	76	59	15.8	26.9	11.0			
12363	22.4	15.0	1.4	12.6	0.1	0.2	74	57	16.7	29.3	10.7			
12364	21.1	14.5	1.5	12.6	0.1	0.2	77	56	16.3	28.9	9.7			
12365	21.6	14.3	1.4	12.6	0.1	0.2	74	56	16.0	28.6	10.2			
12366	21.2	15.1	1.4	12.2	0.1	0.2	79	58	16.8	29.0	10.8			
12367	20.2	14.2	1.2	10.9	0.1	0.2	78	59	15.7	26.6	11.8			

a. Common Fe-Mn? bearing aggregates.  
b. Few Fe-Mn? bearing aggregates.

c. Many Fe-Mn? bearing aggregates.  
d. Trace mica fragments.

Soil type: ~~High~~ silty clay loam

Soil No.: 859Tenn-36-7

Location: Hardin County, Tennessee, 2.3 miles west of Pickwick Dam, on Churchwell farm 50 yards north of farm road. Photo: AIK-6F-12h, (1955)

Vegetation and Use: Row crop - corn.

Slope and Land Form: Nearly level about 1 percent slope slightly concave on large broad flat area in Tennessee River flood plain. Elevation 383 feet.

Drainage and Permeability: Moderately well to well drained. Surface runoff slow. Permeability slow.

Parent Material: Tennessee River sediments derived largely from uplands of limestone origin.

Samples collected by: Edwood Pedersen, George Phibbs, T. R. Love, W. H. Proffitt, E. T. Lampliey; Bobby Hinton; E. C. Sease, and C. S. Brwinig. October 21, 1959.

Profile described by: W. H. Proffitt, E. C. Sease and T. R. Love. October 21, 1959.

Horizon and

Lincoln

Lab. No. Depth

A<sub>p</sub>  
12359 0 to 7 inches Very dark grayish brown (10YR 3/2) silty clay loam; dark brown (10YR 3/3) when crushed; weak fine granular structure; very friable to friable; common roots; abrupt wavy boundary. 5 to 9 inches thick.

A<sub>lb1</sub>  
12360 7 to 15 inches Very dark grayish brown (10YR 3/2) silty clay; dark gray (10YR 4/1) to very dark gray (10YR 3/1) on ped faces; moderate fine and medium angular and subangular blocky structure; firm to very firm, slightly sticky and plastic, hard; few patchy clay films; few small roots; common small pores; gradual smooth boundary. 6 to 9 inches thick.

A<sub>lb2</sub>  
12361 15 to 22 inches Very dark grayish brown (10YR 3/2) silty clay; dark gray (10YR 4/1) on ped surfaces; moderate fine and medium angular and subangular blocky structure; firm; patchy clay films; few small roots; few fine pores; gradual wavy boundary. 7 to 10 inches thick.

C<sub>1</sub>  
12362 22 to 31 inches Dark brown (10YR 3/3) silty clay; ped coated with dark gray (10YR 4/1) and dark grayish brown (10YR 4/2); moderate medium prismatic structure breaking into moderate medium angular blocky structure; firm; patchy clay films; few small roots and root channels; few small pores; diffuse smooth boundary.

C<sub>2</sub>  
12363 31 to 42 inches Dark brown (10YR 3/3) silty clay; moderate medium prismatic structure breaking into moderate medium angular blocky structure; firm; ped coated with patchy clay films of dark grayish brown (10YR 4/2); few roots and root channels; common fine pores;

C<sub>3</sub>  
12364 42 to 51 inches Brown to dark brown (10YR 4/3-3/3) silty clay; weak medium prismatic structure breaking into moderate medium angular blocky structure; firm; dark grayish brown (10YR 4/2) patchy thin clay films on ped faces; few roots and channels; common fine pores; diffuse smooth boundary.

C<sub>4</sub>  
12365 51 to 70 inches Dark brown (10YR 4/3) silty clay, with few fine faint light brownish gray (10YR 6/2) and dark yellowish brown (10YR 3/4) mottles; weak medium prismatic structure breaking into weak medium angular blocky structure; firm; ped coated with dark grayish brown (10YR 4/2) patchy clay films; few small pores; few concretions 2 to 3 mm. in diameter.

C<sub>5</sub>  
12366 70 to 86 inches Dark brown (7.5YR 4/4) silty clay; few fine faint mottles of light brownish gray (10YR 6/2) and grayish brown (10YR 5/2); massive; firm; few small black concretions and segregations.

C<sub>6</sub>  
12367 86 to 96 inches Dark brown (7.5YR 4/4) to dark yellowish brown (10YR 4/4) silty clay loam; few fine faint grayish brown (10YR 5/2) mottles; plus massive; firm.

Remarks: Colors given are for moist soil.

SCENES  
10-64

U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

SOIL Etowah silt loam

SOIL No. 953Tenn-5-21 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland

LAB. Nos. 53772-53774

Soil Type: Etowah silt loam

Soil No.: 853Tenn-5-21

Location: Blount County, Tennessee, 1/2 mile north of Mt. Tabor.

Vegetation and land use: Small grain. Oats.

Horizon and  
Beltsville  
Lab. No.

Ap 0 to 9 inches. Dark reddish brown (5YR 3/4) friable gritty silt loam.  
53772

B1 9 to 16 inches. Reddish brown (2.5YR 4/4) friable clay loam; weak fine blocky structure.  
53773

B2 16 to 50 inches. Reddish brown (2.5YR 4/4) to red (2.5YR 4/6) friable clay loam to silty clay  
loam; weakly developed fine to medium blocky structure. Numerous black specks or stains below  
32 inches.  
53774

soil Etowah silt loam

SOIL Nos. 853Penn-5-23 LOCATION Blount County, Tennessee

**SOIL SURVEY LABORATORY Beltsville, Maryland**

LAB. Nos. 53777-53780

Soil Type: Etowah silt loam

Soil No.: 853Tenn-5-23

Location: Blount County, Tennessee. 4-1/2 miles south of Kiser.

Vegetation and land use: Idle. Sprouts and weeds.

Horizon and  
Beltsville  
Lab. No.

Ap 0 to 7 inches. Dark brown (7.5YR 3/2) very friable silt loam.

53777

B1 7 to 19 inches. Reddish brown (5YR 4/4) friable silt clay loam; weak fine blocky structure.  
Gradual gradation to;

B2 19 to 39 inches. Yellowish red (5YR 4/6) or reddish brown (5YR 4/4) friable silty clay loam;  
moderate fine blocky structure.

C 39 to 54 inches. Yellowish red (5YR 4/8) or red (2.5YR 4/8) moderately friable silty clay loam.  
A few faint yellowish brown mottles, and numerous black specks and stains. Moderate medium  
blocky structure.

2

**SOIL SURVEY LABORATORY** Lincoln, Nebr. December 1958

**SOIL TYPE** Fairmount  
silty clay loam      **LOCATION** Loudon County, Tennessee

**SOIL NOS.** 858Tenn-53-7 **LAB. NOS.** 7853-7856

Soil type: Fairmount silty clay loam

Soil Nos. : 558Tenn-53-7

Location: Loudon County, Tennessee; three miles north of Morgantown, Tennessee; elevation about 900 feet. (Field Sheet ANU-II-30.)

Topography: The sampling site is on a 5-percent slope which is dissected by drainage ways parallel to the slope. The ridge thus formed between two drainage ways is several hundred feet wide at the sampling site.

Physiography: Residual material from argillaceous limestone.

Vegetation: Poor stand of second growth oak, pine, and poplar.

Sampled by: R. H. Jordan and Klaus W. Flach, April 10, 1958.

Described by: Klaus W. Flach.

Horizon and  
Lincoln  
Lab. Number

O1	1/2 to 0 inch. Blak, partly decomposed leaves and other plant residues; some worm casts.
A11 7853	0 to 1 inch. Very dark gray (10YR 3/1) silty clay loam; strong fine granular structure; loose; gradual and smooth boundary.
A12 7854	1 to 6½ inches. Very dark grayish brown (10YR 3/2) silty clay loam; strong very fine subangular blocky structure; friable; sticky; gradual and wavy boundary.
A3 7855	6½ to 11 inches. Very dark grayish brown (10YR 3/2 to 2.5Y 3/2) on the faces of peds with dark grayish brown (10YR 4/2) interiors; silty clay loam; strong fine and medium blocky to subangular blocky structure; friable; gradual and smooth boundary.
B 7856	11 to 15 inches. Dark grayish brown (10YR 4/2) silty clay loam; moderate to strong fine and very fine subangular blocky structure; friable; smooth and immobile boundary.

D 15 inches plus. Argillaceous limestone; within the excavation the dimensions of which are about 2 by 3 feet, the limestone lies almost flat; the maximum difference in elevation is about 1 inch.

**SOIL SURVEY LABORATORY** Lincoln, Nebr. December 1958

**SOIL TYPE** Fairmount **LOCATION** Loudon County, Tennessee  
silty clay loam

SOIL NOS. S58Tenn-53-8 LAB. NOS. 7857-7859

Soil type: Fairmount silty clay loam

Soil Nos. : S58Tenn-53-8

Location: Loudon County, Tennessee; two miles south of Centerville, Tennessee; elevation about 920 feet. (Field Sheet ANU-IL-30.)

Topography: The sampling site is on the almost level narrow crest of a ridge; at the site, the crest is about 80-feet wide and has a slope of 5 percent. There are common exposures of olive gray argillaceous limestone.

Physiography: Residual material from argillaceous limestone.

Vegetation: Red oak, Juniper, Virginia pine, and hickory; the oldest trees are about 50 years old.

Sampled by: R. H. Jordan and Klaus W. Flach, April 10, 1958.

Described by: Klaus W. Flach.

Horizon and

Lincoln

Lab. Number

O1       $\frac{1}{2}$  to 0 inch. Black, partly decomposed organic material; worm casts are common.

A1      0 to  $4\frac{1}{2}$  inches. Dark gray (10YR 4/1) silty clay loam; moderate fine granular structure; loose; gradual and smooth boundary.

A3      4 $\frac{1}{2}$  to 9 inches. Dark gray (10YR 4/1) on surfaces of pedes with brown to strong brown (7.5YR 5/4 to 5/6) interiors; clay; weak to moderate fine angular blocky to subangular blocky structure; friable; gradual and wavy boundary.

B      9 to 14 inches. Dark grayish brown (10YR 4/2 to 2.5Y 4/2) surfaces of pedes with brown to strong brown (7.5YR 5/5) interiors; clay; weak to moderate fine blocky to subangular blocky structure; abrupt and irregular boundary.

D      14 inches plus. Olive gray argillaceous limestone; effervesces with HCl.

**SOIL SURVEY LABORATORY** Lincoln, Nebr. November 1958

**SOIL TYPE** Falaya silt loam **LOCATION** Henderson County, Tennessee

SOIL NOS. S57Tenn-39-8 LAB. NOS. 7768-7712

DEPTH	1B1a VERY	1B1b MEDIUM	1B1c SOME	1B1d NONE	1B2a VERY	1B2b MEDIUM	1B2c SOME	1B2d NONE	2A1 2A2 TEXTURAL
-------	--------------	----------------	--------------	--------------	--------------	----------------	--------------	--------------	------------------------

Soil type: Malaya silt loam

Soil No.: 557Tenn-39-8

Date: March 5, 1957

Area: Henderson County, Tennessee.

Location: Two miles west of Chesterfield and one-half mile south of Beach River along Cane Creek (see photo No. 2F-110). On Belton Robinson farm, 100 yards north of new drainage ditch and 30 feet south of old run. Twenty feet east of old field road.

Present land use: Small grain (oats) which was in corn in 1956.

Sampling party: E. C. Sease, Robbie Flowers, and Roy K. Moore.

Lincoln

Lab.

No. Horizon Depth

7768 A 0-12 Brown to dark brown (10YR 4/3) silt loam: weak fine

7769 C <sub>gl</sub>	12-24 inches	Mottled light brownish gray (2.5Y 6/2), yellowish brown (10YR 5/4), and very dark grayish brown (10YR 3/2); mottles are many, medium, distinct; silt loam; massive; friable; clear smooth boundary.
7770 C <sub>g2</sub>	24-36 inches	Mottled light brownish gray (2.5Y 6/2) and brown to dark brown (10YR 4/3) with a few soft black (10YR 2/1) concretions; mottles are many, coarse, distinct; silt loam; no apparent structure; friable, vesicular; diffuse smooth boundary.
7771 C <sub>g3</sub>	36-48 inches	Gray to light gray (5Y 6/1) with many fine prominent mottles of dark yellowish brown (10YR 4/4) and yellowish red (5YR 4/8); very few concretions; silt loam; structureless; friable; diffuse smooth boundary.
7772 C <sub>g4</sub>	48-60 inches	Gray to light gray (5Y 6/1) with many medium distinct mottles and streaks of dark yellowish brown (10YR 4/4) and very dark brown (10YR 2/2); silt loam; massive; friable; gradual smooth boundary.
C <sub>g5</sub>	60 plus inches	(Not sampled.) Mottled gray (5Y 5/1), dark red (2.5YR 3/6), and dark yellowish brown (10YR 3/4); mottles are many, medium, prominent; silt loam; massive; friable.

Remarks: Colors given are for moist soil unless otherwise stated.

**SOIL SURVEY LABORATORY** Lincoln, Nebr. November 1958

**November 1958**

**SOIL TYPE** Falaya  
silt loam      **LOCATION** Henderson County, Tennessee

**SOIL NOS.** 857-Tenn-39-11 **LAB. NOS.** 7788-7792

Soil type: Palaya silt loam  
Soil Nos. : 857Tenn-39-11

Date: May 21, 1957

Area: Henderson County, Tennessee

Location: About one mile northeast of Sardis on Ewell Presley farm. Along  
~~gravel road~~ that crosses west branch of Doe Creek 50 feet south of road and

Described by E. C. Sease, Robbie Flowers,  
Wiley Mangrum, and Lewis Dungan.

# **SOIL SURVEY LABORATORY Lincoln, Nebr.**

October 1963

**SOIL TYPE** Forestdale  
silt loam      **LOCATION** Dyer County, Tennessee

SOIL NOS. S61Tenn-23-14 LAB. NOS. 16467-16473

Soil type: Forestdale silt loam

Soil Nos. : 861Tenn-23-14

Location: Dyer County, Tennessee; from Bogota on Miston road 1.2 miles west to gravel road - on gravel road 1.7 miles to junction - from junction on gravel road 0.8 mile west to a dirt road - on dirt road south 0.4 mile - 100 feet east of dirt road to sample site. Aerial photo ADN-2R-164.

Vegetation and use: Soybeans.

Drainage and permeability: Poorly drained with slow runoff and slow internal drainage; permeability is slow.

Parent material: Alluvium from Mississippi River.

Collected by: E. J. Pedersen, J. L. Millet, J. A. Elder, E. C. Sease, W. C. Moffitt, C. L. Moore, and W. C. Jackson.

Described by: W. T. Brown, October 19, 1961.

Horizon and

Lincoln

Lab. Number

Ap 16467 0 to 8 inches. Dark gray (10YR 4/1) silt loam; weak medium granular structure, lower three inches is massive firm plow pan; few fine roots; abrupt smooth boundary.

Btg 16468 8 to 16 inches. Gray (5Y 5/1) silty clay loam with common medium distinct dark brown (7.5YR 4/4) and dark grayish brown (10YR 4/2) mottles; moderate medium subangular blocky structure; firm; few fine roots; clear smooth boundary.

B2g 16469 16 to 27 inches. Gray (10YR 5/1) silty clay with common medium distinct dark brown (7.5YR 4/4) and very dark grayish brown (10YR 3/2) mottles; weak medium prismatic structure breaking to moderate medium angular blocky structure; firm; sand coats on some vertical ped faces, possibly worked down through cracks in dry soil; few fine roots; clear smooth boundary.

B3g 16470 27 to 35 inches. Gray (10YR 5/1) silty clay loam or clay loam with common coarse distinct dark brown (7.5YR 4/4) and few fine faint pale brown (10YR 6/3) mottles; weak medium prismatic structure breaking to weak medium subangular blocky structure; firm; common fine roots, mostly on vertical ped faces; few wormholes; gradual smooth boundary.

Cg 16471 35 to 45 inches. Gray (10YR 5/1) silty clay loam or clay loam; many coarse distinct brown (10YR 4/3) mottles; very coarse prismatic structure to massive; firm; few roots; few fine pores; abrupt smooth boundary.

Du1 16472 45 to 51 inches. Brown (10YR 4/3) loamy sand or sand; massive; very friable; firm; few fine roots; few 1/2-inch strata of brown (10YR 4/3) sandy loam; gradual smooth boundary.

Du2 16473 51 to 69 inches. Brown (10YR 4/3) sand; single grain to weak medium granular structure; loose; few 1/2-inch strata of brown (10YR 4/3) loamy sand.

Remarks: Colors and Munsell notations are for moist soil; soil was dry when sampled. All samples were fumigated with methyl bromide for 24 hours.

SOIL SURVEY LABORATORY Lincoln, Nebr. October 1963

SOIL TYPE Forestdale LOCATION Dyer County, Tennessee  
silt loam

SOIL NOS. 561Tenn-23-15 LAB. NOS. 16474-16482

DEPTH INCHES	HORIZON	1B1a	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)						3A1		2A2		TEXTURAL CLASS
			VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY	< 0.002	0.02-0.002	> 2	
0-8	Ap	0.5a	0.9a	0.7b	3.5d	15.5	55.2	23.9	50.0	23.0	-	-	-
8-12	A2lg	0.3a	0.8a	0.5b	2.5e	13.6	55.2	27.1	47.4	23.2	-	-	-
12-16	A2sg	0.4a	0.6a	0.4b	2.4e	15.0	56.4	24.8	49.8	23.4	-	-	-
16-22	B2lg	0.4a	0.4a	0.3b	1.9e	14.0	51.0	32.2	46.7	19.8	-	-	-
22-29	B2sg	0.2a	0.3a	0.2b	1.7e	15.4	45.3	36.9	46.3	15.8	-	-	-
29-35	B3	0.1a	0.1a	0.2a	1.2e	16.1	49.5	32.5	51.4	15.4	-	-	-
35-53	C	-	Tr.a	0.1a	1.2e	9.3	60.4	29.0	40.3	30.4	-	-	-
53-59	D1a	-	-	0.2	9.3	47.1	29.0	14.4	74.9	8.0	-	-	-
59-80	D2e	-	-	1.0	12.0	52.5	25.8	8.7	83.3	5.7	-	-	-
8C1a		6B1c	ORGANIC MATTER	BULK DENSITY						WATER RESISTION			
pH	CaCO <sub>3</sub> equiv. alumina	6A1a	6B1a	C/N	Field 4B3	Rate Water	4A1a	4B3	4A1c	4A1b	4B2	4G1	
		0.0	N		Water	Water		Water	1/3-Bar	1/3-Bar	15-Bar	15-to Pieces Sieved	1/3-Bar
4.5		1.23	0.114	11	12.6	1.56	21.4	1.50	1.57	21.4	10.6	.16	
4.1		0.25	0.041		11.1	1.59	22.0	1.56	1.59	22.1	10.8	.18	
4.1		0.14	0.033		10.5	1.68	19.0	1.61	1.68	21.6	9.9	.19	
3.8		0.14	0.037		14.0	1.64	20.4	1.57	1.66	23.4	13.7	.15	
4.0		0.18	0.039		16.3	1.63	20.1	1.54	1.68	28.0	15.9	.19	
4.4		0.12			15.5	1.60	23.2	1.50	1.63	25.6	15.7	.15	
4.0		0.10			15.5	1.58	24.4	1.50	1.61	26.8	15.0	.18	

Soil type: Forestdale silt loam.

Soil Nos. : 861Tenn-23-15

Location: Dyer County, Tennessee; from Bogota on Miston road 1.2 miles west to gravel road - 1.7 miles to junction - from junction to gravel road 0.6 mile west to a dirt road - on dirt road south 1.4 miles - 40 feet east of dirt road to sample site. Aerial photo ADN-1R-132.

Vegetation and use: Recently combined soybeans.

Slope and land form: Nearly level old natural levee of Mississippi River.

Drainage and permeability: Poorly drained with slow runoff and slow internal drainage; permeability is slow.

Parent material: Alluvium from Mississippi River.

Collected by: E. J. Pedersen, J. L. Millet, J. A. Elder, E. C. Sease, W. C. Moffitt, C. L. Moore, and W. C. Jackson.

Described by: W. T. Brown, October 19, 1961.

Horizon and

Lincoln

Lab. Number

Ap 0 to 8 inches. Very dark grayish brown (10YR 3/2) silt loam; weak fine granular structure; friable;

A21g 8 to 12 inches. Grayish brown (10YR 5/2) silt loam; with common fine faint yellowish brown (10YR 5/4) and gray (10YR 6/1) mottles; massive; firm; few concretions; few fine roots; clear smooth boundary.  
16475

A22g 12 to 16 inches. Pale brown (10YR 6/3) silt loam with few fine faint yellowish brown (10YR 5/4) mottles; weak fine granular structure; friable; common fine roots; few fine pores; few concretions; clear smooth boundary.  
16476

B21g 16 to 22 inches. Gray (10YR 5/1) silty clay loam or silt loam with many fine distinct yellowish brown (10YR 5/6) mottles; weak coarse prismatic structure breaking to weak medium subangular blocky structure; firm to friable; common fine roots; common fine pores; few concretions; clear smooth boundary.  
16477

B22g 22 to 29 inches. Gray (5Y 5/1) silty clay with few medium distinct dark brown (7.5YR 4/4) mottles and prism faces have light brownish gray (10YR 6/2) coatings; weak coarse prismatic structure breaking to moderate medium subangular blocky structure; firm; few roots; few concretions; clear smooth boundary.  
16478

B3 29 to 35 inches. Dark yellowish brown (10YR 4/4) silty clay loam with common medium distinct gray (5Y 5/1) and few fine faint dark brown (7.5YR 4/4) mottles; weak coarse subangular blocky structure; firm; few fine roots; few soft concretions; clear smooth boundary.  
16479

C 35 to 53 inches. Dark brown (7.5YR 4/4) silty clay loam with many medium distinct pale brown (10YR 6/3) and gray (10YR 5/1) mottles; massive; firm; few fine roots; clear smooth boundary.  
16480

Dul 53 to 59 inches. Brown (10YR 4/3) fine sandy loam with common coarse distinct black (N 2/) stains; massive; friable; few fine roots; few fine concretions; clear smooth boundary.  
16481

Du2 59 to 80 inches. Brown (10YR 4/3) fine sandy loam; massive; very friable; few fine roots.  
16482

80 to 144 inches. (Bucket auger boring.) Fine sandy loam becoming more sandy with depth; from about 100 to 144 inches is loamy fine sand or fine sand.

Remarks: Colors and Munsell notations are for moist soil; soil was dry when sampled. All soil samples were fumigated with methyl bromide for 24 hours.



Soil type: Freeland silt loam Described by E. C. Sease and Robbie Flowers  
 Soil No.: 857Penn-39-6.  
 Date: June 1, 1955  
 Area: Henderson County, Tennessee  
 Location: 2.6 miles south of Chesterfield on Chesterfield-Scotts Hill Road.  
 (See Photo No. 2F-109.) 20 feet west of road in orchard of Luther Dyer,  
 100 yards north of Luther Dyer's house.  
 Present land use: Pea patch in home orchard (some barnyard manure has been  
 spread).  
 Sampling party: E. C. Sease and Robbie Flowers.  
 Lincoln  
 Lab.  
 No. Horizon Depth Description  
 7751 A<sub>p</sub> 0-4 inches Brown to dark brown (10YR 5/3-4/3) friable silt loam;  
 moderate fine granular structure; abrupt boundary.  
 7752 B<sub>21</sub> 4-13<sub>1</sub>/<sub>2</sub> inches Dark brown (7.5YR 4/4) friable to firm light silty clay  
 loam; moderate medium subangular blocky structure; a few  
 fine soft dark brown concretions; gradual boundary.  
 7753 B<sub>22</sub> 13<sub>1</sub>/<sub>2</sub>-16<sub>1</sub>/<sub>2</sub> inches Dark yellowish brown (10YR 4/4) friable to firm silty clay  
 loam with a few fine faint mottles of yellowish brown  
 (10YR 5/4); a few fine soft dark brown concretions; moderate  
 medium subangular blocky structure; gradual boundary.  
 7754 B<sub>23</sub> 16<sub>1</sub>/<sub>2</sub>-24<sub>1</sub>/<sub>2</sub> inches Dark yellowish brown (10YR 4/4) friable to firm silty clay  
 loam with common medium faint mottles of brown (10YR 5/3)  
 and yellowish brown (10YR 5/4); moderate medium and coarse  
 subangular blocky structure; common fine dark brown  
 concretions; gradual boundary.  
 7755 B<sub>3a1</sub> 24<sub>1</sub>/<sub>2</sub>-29<sub>1</sub>/<sub>2</sub> inches Mottled dark yellowish brown (10YR 4/4), pale brown (10YR 6/3),  
 and brown (7.5YR 4/4); mottles are many, medium, distinct;  
 friable heavy silt loam; many medium dark brown concretions;  
 moderate medium angular blocky structure.  
 7756 B<sub>3a2</sub> 29<sub>1</sub>/<sub>2</sub>-35<sub>1</sub>/<sub>2</sub> inches Mottled brown (7.5YR 4/4), gray (10YR 5/1), and yellowish  
 brown (10YR 5/4); mottles are many, medium, distinct; firm  
 heavy silt loam; common fine soft dark brown and black  
 concretionary material; weak coarse angular blocky to  
 massive structure; gradual boundary.  
 7757 B<sub>3a3</sub> 35<sub>1</sub>/<sub>2</sub>-43<sub>1</sub>/<sub>2</sub> inches Yellowish brown (10YR 5/4) with many medium distinct mottles  
 of grayish brown (10YR 5/2) and dark yellowish brown  
 (10YR 4/4); firm heavy silt loam; massive, breaking to  
 weak coarse angular blocky structure under pressure; many  
 fine soft dark brown concretions.  
 7758 C<sub>11</sub> 43-52 inches Mottled reddish brown (5YR 4/4), gray (10YR 5/1), and  
 yellowish brown (10YR 5/4); mottles are many, medium,  
 distinct; firm light silty clay loam; massive, breaking to  
 very weak coarse angular blocky under pressure; gradual  
 boundary.  
 7759 C<sub>12</sub> 52-58 inches Reddish brown (5YR 4/4) with many coarse prominent mottles  
 of gray (2.5YR 5/0) and yellowish brown (10YR 5/4); firm  
 silty clay loam with tongues of light gray (2.5Y 7/2)  
 silty clay; massive, breaking to weak medium angular blocky  
 structure under pressure; gradual boundary.  
 7760 D 58 plus inches Mottled yellowish brown (10YR 5/4), reddish brown (5YR 4/4),  
 and pale olive (5Y 6/3) firm clay loam; massive, breaking  
 to moderate coarse angular blocky structure under pressure.

Remarks: Colors given are for moist soil unless otherwise stated. This is the  
 eroded gently sloping phase of Freeland.

**SOIL SURVEY LABORATORY** Lincoln, Nebr. November 1958

**SOIL TYPE** Freeland silt loam      **LOCATION** Henderson County, Tennessee

**SOIL NOS.** S57Tenn-39-12 **LAB. NOS.** 7793-7799

Soil type: Freeland silt loam  
 Soil No.: 857Tenn-39-12

Described by E. C. Sease, Robbie Flowers,  
 Wiley Mangrum, and Lewis Dungan

Date: May 27, 1957

Area: Henderson County, Tennessee.

Location: About nine miles north of Lexington, Tennessee, along State Highway No. 22. Twenty-five yards east of highway and 200 yards south of Beaver School. (See photo No. 27-6.) On Bunice Walker farm.

Present land use: Cultivated field (oats) which in 1956 was in cultivation.

Sampling party: E. C. Sease, Robbie Flowers, Wiley Mangrum, and Lewis Dungan.  
Lincoln

Lab.

No. Horizon Depth

7793	A <sub>p</sub>	0-6 inches	Yellowish brown (10YR 5/4) silt loam; weak fine granular structure; very friable, numerous pores and small roots; abrupt smooth boundary.
7794	B <sub>21</sub>	8-13 inches	Dark yellowish brown (10YR 4/4) to brown to dark brown (7.5YR 4/4) coarse silty clay loam; moderate medium subangular blocky structure; friable; some clay skins; clear smooth boundary.
7795	B <sub>22</sub>	13-18 inches	Yellowish brown (10YR 5/4) with numerous dark yellowish clay skins; silt loam; moderate to strong medium subangular blocky structure; friable; clear smooth boundary.
7796	B <sub>3ml</sub>	18-25 inches	Dark yellowish brown (10YR 4/4) with common medium distinct mottles of light brownish gray (2.5Y 6/2) and brown to dark brown (7.5YR 4/2); the brown to dark brown color is on the ped faces; weak coarse angular blocky structure; firm; some clay skins; gradual smooth boundary.
7797	B <sub>3m2</sub>	25-34 inches	Mottled light gray to gray (2.5Y 6/1), yellowish brown (10YR 4/4), and brown to dark brown (7.5YR 4/2); mottles are many, medium, distinct; some soft dark brown concretions; silt loam; weak coarse angular blocky structure; firm; a few clay skins; gradual smooth boundary.
7798	C <sub>1</sub>	34-46 inches	Brown (10YR 5/3) to yellowish brown (10YR 5/4) silt loam; massive; firm; seams and streaks of variegated gray (2.5Y 5/0) and yellowish brown (10YR 5/8) clay; some sand in this layer; diffuse smooth boundary.
7799	C <sub>2</sub>	46-58 inches	Brown (10YR 5/3) to yellowish brown (10YR 5/4) silt loam; massive; firm; seams and streaks of variegated gray (2.5Y 5/0) and yellowish brown (10YR 5/8) clay; diffuse smooth boundary.
	C <sub>3</sub>	58 plus inches	Variegated gray (2.5Y 5/0), yellowish brown (10YR 5/8), and light gray (2.5Y 7/1) sandy clay; massive; firm. Not sampled.

Remarks: Colors given are for moist soil unless otherwise stated. This is the eroded gently sloping phase of Freeland.

soil Fullerton silt loam

SOIL Nos. 853Tenn-5-1 2

LOCATION Blount County, Tennessee

**SOIL SURVEY LABORATORY** Beltsville, Maryland

LAR Nos. 53739-53743

Soil Type: Fullerton silt loam

Soil No.: S53Tenn-5-12

Location: Blount County, Tennessee. 4 miles northwest of Friendsville.

Vegetation and land use: Pasture, chiefly lespedeza. Some sprouts, weeds and briars.

Horizon and

Beltsville

Lab. No.

Ap 53739	0 to 7 inches. Light yellowish brown (10YR 6/4) friable silt loam. Few small angular chert fragments up to 1/4 inch in diameter.
A3 53740	7 to 13 inches. Yellowish brown (10YR 5/6) friable silt loam; weak fine, blocky structure. Gradual gradation to;
B1 53741	13 to 19 inches. Strong brown (7.5YR 5/6) friable silt clay loam; weakly developed fine blocky structure. Gradual gradation to;
B2 53742	19 to 41 inches. Red (2.5YR 4/6) moderately firm silty clay loam; moderately developed medium blocky structure.
C 53743	41 to 55 inches. Red (2.5YR 4/8) moderately firm silty clay loam. Some distinct brownish yellow (10YR 6/6) mottles. Moderate medium blocky structure. Numerous angular chert fragments.

soil Fullerton silt loam

SOU. NO. 853Tenn-5-15

LOCATION Elizabethtown, Kentucky

~~see summary section~~ Beltsville, Maryland

LAB. NO. 527E3 527E4

Soil Type: Fullerton silt loam

Soil No.: 853Tenn-5-15

Location: Blount County, Tennessee. 2-3/4 miles north of Friendsville.

Vegetation and land use: Pasture. Lespedeza, weeds, and sprouts.

Horizon and  
Beltsville  
Lab. No.

- |             |   |
|-------------|---|
| Ap<br>53751 | 0 to 7 inches. Grayish brown (10YR 5/2) to brown (10YR 5/3) friable silt loam. Few small angular chert fragments up to 1/4 inch in diameter.  |
| B1<br>53752 | 7 to 16 inches. Strong brown (7.5YR 5/6) friable silt loam to silty clay loam; moderately developed medium to fine blocky structure. Gradual gradation to;  |
| B2<br>53753 | 16 to 34 inches. Red (2.5YR 5/8) to yellowish red (5YR 5/8) moderately firm silty clay loam; strongly developed medium blocky structure. Occasional angular chert fragment up to 1/2 inch in diameter. Gradual gradation to;                  |
| C<br>53754  | 34 to 56 inches. Red (2.5YR 5/8) to yellowish red (5YR 5/8) moderately firm silty clay loam; many distinct brownish yellow (10YR 6/6) mottles; strong medium blocky structure. Few angular coarse chert fragments up to 4 inches in diameter. |

SOIL Greendale silt loam, undulating phase SOIL Nos. 854Tenn-16-5 LOCATION Coffee County, Tennessee

**SOIL SURVEY LABORATORY** Beltsville, Maryland LAB. Nos. 551312 - 551313

Soil Type: Greendale silt loam, undulating phase.

Soil No.: 854Tenn-16-5

Location: Coffee County, Tennessee. 3.6 miles south of Davis Grocery at Hopewell on Maple Springs-Plainview-Hopewell Road. 300 feet north of small wooded cemetery and 1000 feet south by east of intersection of gravel road in large field and 3 feet south of Oak Stump in small incipient drainage-way. Aerial photo 60-129.

Horizon and  
Beltsville  
Lab. No.

551312 0 to 11 inches. Brown (10YR 4/3 - 5/3) very friable silt loam; weak fine crumb or granular structure.

551313 11 to 22 inches. Yellowish brown (10YR 5/4) very friable silt loam; moderate fine to medium crumb structure.

22 inches plus. Mottled light yellowish brown (10YR 6/4 - 2.5Y 6/4) friable silty clay loam; Not Sampled mottlings vary from few to many in abundance and from faint to prominent.

SOIL Greendale silt loam, undulating phase SOIL Nos. 854Term-16-15 LOCATION Coffee County, Tennessee

**SOIL SURVEY LABORATORY** Beltsville, Maryland

LAB. Nos. 551351 - 551352

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mica, ml = mica, Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite

**Relative amounts:** blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Greendale silt loam, undulating phase.

Soil No.: 85476aa-16-15

Location: Coffee County, Tennessee. 1.0 mile west of Ninth Modal School on Summitville-Ninth Modal road to red brick telephone building at intersection. North 0.4 mile to second 90° curve. 30 yards south of curve in incipient drainageway. Aerial photo 7G-18.

Horizon and  
Beltsville  
Lab. No.

0 to 1 inch. Brown (10YR 5/3 - 4/3) very friable silt loam; weak fine crumb structure.  
551351

12 to 24 inches. Yellowish brown (10YR 5/4) very friable silt loam; moderate fine to medium  
crumb structure.  
551352

24 inches plus. Mottled light yellowish brown (10YR 6/4) and yellow friable silty clay loam.  
Not Sampled

**SOIL SURVEY LABORATORY**  
Lincoln, Nebraska

LOCATION Fayette County, Tennessee

SOIL TYPE Grenada silt loam,  
terrace phase

Lincoln LAB NOS. 12193 - 12201

SOIL NOS. S59Tenn-24-1

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1Bla						PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)			3Al		2A2 TEXTURAL CLASS	
			VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY <0.002	INTERNATIONAL	II	III			
											0.2-0.02	0.02-0.002			
12193	0-7	Ap	0.1	1.2	2.1	2.2	0.9	81.2	12.3	46.1	36.6	-	sil/si		
12194	7-16	B21	0.1a	0.7a	1.3	1.1	0.5	70.1	26.2	34.3	36.6	-	sil		
12195	16-21	B22	< 0.1	0.9b	1.4b	1.3b	0.6t	68.8	27.0	33.8	36.0	-	sil/sic1		
12196	21-31	B3mg1	0.1	3.1a	4.9a	4.4a	1.2a	71.8	14.5	36.4	37.8	-	sil		
12197	31-43	B3mg2	0.1	4.7	9.0	7.1	1.2	59.6	18.3	32.5	30.0	-	sil		
12198	43-55	B3mg3	0.3	9.7	17.8	14.3	2.2	40.7	15.0	26.5	19.8	-	1		
12199	55-65	B3mg4	0.4	11.7	22.6	19.3	3.0	30.9	12.1	23.0	15.7	-	sl		
12200	65-74	Dlu	1.3	13.4	27.5	24.5	3.5	19.1	10.7	19.4	9.2	-	sl		
12201	74-90+	D2u	0.3	16.4	41.8	33.5	2.4	4.3	1.3	11.2	1.9	-	s		
			pH			ORGANIC MATTER			6C1a	BULK DENSITY			C	4B2	
			8C1a $H_2O$ 1:1			6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Free Iron as $Fe_2O_3$ %	Field 4B4 Water %	State 4Ala Water g/cc	30-Cm. 4B3 Water %	0.D. 4Alc g/cc	15-Bar Water g	
12193	6.5					0.62	0.064	10	1.2	16.7	1.49	18.5	1.47	1.50	5.1
12194	4.9					0.28	0.051	5	2.4	9.4	1.44	26.2	1.33	1.44	10.4
12195	4.8					0.19	0.043		2.8	12.2	1.44	28.2	1.37	1.47	11.0
12196	4.9					0.09	0.023		2.1	7.8	1.64	22.5	1.57	1.63	7.4
12197	4.8					0.10			1.8	13.5	1.64	21.6	1.59	1.69	7.6
12198	4.9					0.06			1.2	11.6	1.76	15.9	1.73	1.77	5.6
12199	4.9					0.07			0.9	8.8	1.78	11.9	1.74	1.79	4.4
12200	4.9					0.06			0.7	11.6	1.76	10.8	1.71	1.77	3.6
12201	5.1					0.02			0.2						0.6
			5A1a CATION EXCHANGE CAPACITY $NH_4OAc$	EXTRACTABLE CATIONS 5Bla						5C3	5G1	5R1a	5A3a	8D3	
			6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H		Base Sat. %	Base on Sum	5R1a Ext. %	5A3a Bases OAc < me / 100 g >	8D3 Ca/Mg		
12193	7.1	5.9	1.4	<0.1	0.4	3.9	66	108	7.7	11.6	4.2				
12194	11.0	4.8	2.4	0.1	0.2	9.1	45	68	7.5	16.6	2.0				
12195	12.0	3.4	3.1	0.1	0.2	11.1	38	57	6.8	17.9	1.1				
12196	7.8	1.3	1.8	0.1	0.2	7.8	30	44	3.4	11.2	0.7				
12197	8.8	0.9	2.3	0.1	0.2	9.0	28	40	3.5	12.5					
12198	6.4	0.4	1.6	0.1	0.1	6.6	25	34	2.2	8.8					
12199	4.9	0.3	1.4	<0.1	0.1	5.6	24	37	1.8	7.4					
12200	4.6	0.2	1.6	<0.1	0.1	4.4	30	41	1.9	6.3					
12201	0.7	0.2	<0.1	<0.1	<0.1	0.5	28	28	0.2	0.7					

- a. Few Fe-Mn? bearing aggregates.
- b. Common Fe-Mn? bearing aggregates.
- c. See remarks in description.

Soil type: Grenada silt loam, terrace phase  
 Soil No.: 599Tenn-26-1

Location: Fayette County, Tennessee, approximately 17 miles southeast of Somerville, on Cowan Brothers farm, 2 miles south of LaGrange and 660 yards east of LaGrange-Michigan City gravel road. Photo ADE-1F-106(1950)

Vegetation and Use: Cotton field.

Slope and Land Form: Nearly level (0-2 percent) broad flat nearly level to gently sloping terrace topography.

Drainage and Permeability: Moderately well-drained. Runoff slow to medium; permeability moderate in upper part, slow in lower part.

Parent Material: Loess covered terraces and/or old alluvium from loessial uplands.

Samples Collected by: Edwood Pedersen, George Phibbs, D. K. Springer, M. E. Springer, R. K. Moore, W. C. Mangrum, and E. C. Sease - October 14, 1959.

Profile Described by: E. C. Sease and D. K. Springer - October 14, 1959.

Horizon and

Lincoln

Lab. No. Depth

Ap	0 to 7 inches	Brown to dark brown (10YR4/3) silt loam; weak fine granular structures; very friable; common fine roots; few fine concretions; clear smooth boundary. 6 to 8 inches thick.
----	---------------	--

B21 12194	7 to 16 inches	Brown to dark brown (7.5YR4/4) silty clay loam or fine silt loam; moderate medium subangular blocky structure; firm; common fine roots; few fine brown soft concretions; clear wavy boundary. 7 to 11 inches thick.
--------------	----------------	---

B22 12195	16 to 21 inches	Strong brown (7.5YR5/6) fine silt loam; moderate fine subangular blocky structure; firm; slightly hard when dry; common small roots; few fine brown soft concretions; clear wavy boundary. 4 to 6 inches thick.
--------------	-----------------	---

B3mg1 12196	21 to 31 inches	Mottled light brownish gray (10YR6/2), pale brown (10YR6/3), brown (10YR5/3) and dark yellowish brown (10YR4/4) silt loam; mottles are many medium faint; moderate medium subangular blocky structure; very firm in places; friable when crushed; few roots; common patchy black coatings on pedes; much concretionary material; abrupt irregular boundary. 6 to 40 inches thick.
----------------	-----------------	---

B3mg2 12197	31 to 43 inches	Brown to dark brown (7.5YR4/4) silt loam with common thin distinct streaks of light brownish gray (10YR6/2); weak to moderate coarse platy structure; 20 percent polygons; firm; few small roots; few black coatings or stains on pedes; gradual wavy boundary. 4 to 12 inches thick.
----------------	-----------------	---

B3mg3 12198	43 to 55 inches	Reddish brown (5YR4/4) to dark brown (7.5YR4/4) loam to clay loam; few thin streaks of light brownish gray (10YR6/2); weak coarse angular blocky structure to massive; 10 percent polygons; firm; brittle; few roots at top of this horizon.
----------------	-----------------	--

B3mg4 12199	55 to 65 inches	Reddish brown (5YR4/4) to dark brown (7.5YR4/4) loam to clay loam; few coarse distinct streaks of light brownish gray (10YR6/2) few patchy black stains or coatings on pedes; weak coarse angular blocky structure to massive; firm; almost brittle; 5 percent polygon; gradual wavy boundary. 8 to 10 inches thick.
----------------	-----------------	--

Blu 12200	65 to 74 inches	Reddish brown (5YR4/4) sandy loam with few coarse distinct streaks of light brownish gray (10YR6/2); massive; friable.
--------------	-----------------	--

Blu 12201	74 to 90 inches plus	Pale brown (10YR6/3) sand; single grain; water table at 74".
--------------	----------------------	--

Remarks: Colors given are for moist soil. Some horizons have lower oven-dry than field-moist bulk density. The field-moist clods were air-dried and then remoistened to 30-cm. tension before being oven-dried and the volume determined. Wetting to 30-cm. tension against a weak confining pressure may result in

**SOIL SURVEY LABORATORY**  
Lincoln, Nebraska

LOCATION Fayette County, Tennessee

SOIL TYPE Grenada silt loam,  
terrace phase

Lincoln Lab Nos. 12217 - 12225

SOIL NOS. 859 Tenn-24-4

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1Rla						PARTICLE SIZE DISTRIBUTION (in mm.)			(per cent) 3A1			TEXTURAL CLASS
			VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	INTERNATIONAL	II 0.2-0.02	III 0.02-0.002	2A2 > 2		
12217	0-6	Ap	0.1	0.7	1.2	2.3	1.1	78.8	15.8	47.3	33.6	-	sil		
12218	6-11	B21	<0.1	0.2a	0.4a	1.0a	0.7a	70.5	27.2	33.8	37.8	-	sycl/sil		
12219	11-18	B22	<0.1	0.1a	0.2a	0.8a	0.7a	70.5	27.7	35.1	36.5	-	sycl		
12220	18-26	B23g	<0.1	0.2a	0.5a	1.7a	0.9a	74.8	21.9	37.1	39.4	-	sil		
12221	26-40	B3mg1	<0.1	0.4	1.1	4.1	1.7	73.5	19.2	40.0	37.0	-	sil		
12222	40-53	B3mg2	<0.1	1.2	3.5	14.3	5.1	58.2	17.7	42.7	27.0	-	sil		
12223	53-60	B3mg3	0.1	2.5	7.7	32.9	9.6	35.5	11.7	43.2	16.4	-	fsl		
12224	60-66	Dul	0.2	3.2	9.5	41.3	11.1	24.8	9.9	42.2	10.9	-	fsl		
12225	66-72	Du2	0.2	3.7	13.0	56.8	9.8	11.9	4.6	39.4	4.5	-	lfs		
		pH	ORGANIC MATTER						5C1a	BULK DENSITY b			4B2		
		8C1a H <sub>2</sub> O F:1			6A1a ORGANIC CARBON	6E1a NITROGEN	C/N	Free Fe <sub>2</sub> O <sub>3</sub> %	Field 4B4	State 4A1a	30-Cm. 4B3	4A1c	0.D. 4A1h	15-Bar Water %	
12217	6.2			0.77	0.086	9	1.5	13.1	1.48	24.1	1.43	1.50	6.7		
12218	5.2			0.32	0.051	6	2.5	9.2	1.51	23.6	1.43	1.51	10.9		
12219	5.0			0.21	0.044		2.8	11.9	1.48	25.3	1.41	1.49	11.4		
12220	5.0			0.14	0.031		2.5	15.4	1.47	26.9	1.43	1.48	9.8		
12221	5.1			0.11			2.2	15.5	1.55	23.7	1.50	1.56	9.2		
12222	5.0			0.08			1.5	11.6	1.66	20.9	1.59	1.64	7.2		
12223	5.1			0.07			0.8	7.6	1.83	13.2	1.77	1.79	4.6		
12224	5.1			0.03			0.6						4.3		
12225	5.1			0.05			0.4						2.0		
		5A1a CATION EXCHANGE CAPACITY NH <sub>4</sub> , OAc (SUM)	EXTRACTABLE CATIONS c						5C3	5C1	5B1a	5A3a	8D3		
		6M2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H		Base Sat. % on Sum	Base Ext. % on Sum	Base Ext. % on Sum	Bases Cations NH <sub>4</sub> , OAc < me/100g	Ca/Mg			
		milliequivalents per 100g soil													
12217	8.2	6.4	1.5	<0.1	0.3	3.9	68	100	8.2	12.1	4.3				
12218	11.5	4.1	3.7	0.1	0.2	7.8	51	70	8.1	15.9	1.1				
12219	12.3	1.6	3.4	0.1	0.2	11.3	32	43	5.3	16.6	0.5				
12220	11.4	0.7	3.0	0.1	0.2	10.5	28	35	4.0	14.5					
12221	10.2	0.4	2.7	0.1	0.2	9.8	26	33	3.4	13.2					
12222	8.6	0.1	2.5	0.1	0.2	8.0	27	34	2.9	10.9					
12223	5.2	<0.1	1.7	0.1	0.1	4.8	28	36	1.9	6.7					
12224	4.8	<0.1	1.5	0.1	0.1	4.4	28	35	1.7	6.1					
12225	2.0	<0.1	0.4	<0.1	<0.1	1.9	17	20	0.4	2.3					

- a. Few Fe-Mn? bearing aggregates.  
 b. See remarks in description.

Soil type: Grenada silt loam, terrace phase

Soil No.: 599Tenn-24-4

Location: Fayette County, Tennessee, about 17 miles south of Somerville on Wolf River terrace, about 2 miles southwest of LaGrange, 1 mile west of LeGrange-Michigan City Road and 1/2 mile north of gravel road on Cowan Brothers farm. Photo ADB-3F-96 (1950)

Vegetation and use: Corn.

Slope and Land Form: Nearly level (0-2 percent) broad flat river terrace.

Drainage and Permeability: Moderately well drained. Runoff slow to medium. Permeability moderate in upper part, slow in lower part.

Parent Material: Loess covered terraces and/or old alluvium from loessial uplands.

Samples Collected by: Edwood Pedersen, George Phibbs, R. K. Moore, W. C. Mangrum

Profile Described by: D. K. Springer - October 15, 1959

Horizon and

Lincoln

Lab No. Depth

A<sub>p</sub> 0 to 6 Brown to dark brown (10YR6/3) silt loam; weak fine granular inches structure; very friable; common fine roots; clear wavy boundary. 3 to 7 inches thick.

B<sub>1</sub> 6 to 11 Dark brown (7.5YR6/4) heavy-silt loam; weak fine subangular 12218 inches blocky structure; friable; few fine roots; clear wavy boundary. 4 to 7 inches thick.

B<sub>2</sub> 11 to 18 Dark brown (7.5YR6/4) light silty clay loam; weak fine and 12219 inches medium subangular blocky structure; firm when moist slightly hard when dry; few fine roots; few small dark brown concretions; clear wavy boundary. 2 to 8 inches thick.

B<sub>2</sub>g 18 to 26 Dark brown (7.5YR6/4) silt loam with common medium faint mottles 12220 inches of light brownish gray (10YR6/2) and pale brown (10YR6/3); weak medium subangular blocky structure; friable; few fine roots; few small pores; few small black concretions; clear wavy boundary. 3 to 6 inches thick.

B<sub>3</sub>g1 26 to 40 Light brownish gray (10YR6/2) silt loam comprising exterior of 12221 inches polygons faces and some patches between tops of polygons totaling about 20 percent of horizon; interface of polygons consists of strong brown (7.5YR6/6) silt loam 2 to 4 mm thick and interior of polygons consists of brown to strong brown (7.5YR6/4-5/6) silt loam; polygons break into weak fine subangular blocky structure; firm; compact brittle; few black stains and very few small black soft concretions; clear wavy boundary. 12 to 20 inches thick.

B<sub>3</sub>g2 40 to 53 Dark brown (7.5YR6/4) silt loam interior of polygons; light 12222 inches brownish gray (10YR6/2) silt loam on polygon faces; polygon faces comprise about 15 percent of horizon; weak coarse prismatic structure breaking to somewhat massive to weak fine subangular blocky structure; firm; very compact and brittle; clear wavy boundary. 12 to 20 inches thick.

SOIL Gethrie silt loam, level phase

SOIL Nos. 551Term-16-19

LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland

LAB. Nos. 551963 - 551366

Depth (in.)	Horizon	1B1b													3B2			Coarse fragments 3B1		
		Total			Sand				SII			Int. III		Int. II		3B2		Coarse fragments 3B1		
		Sand (2-0.05) (0.05- 0.002)	Silt (0.05- 0.002)	Clay (< 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)		0.05-0.02 (0.02- 0.002)	Int. III	0.02-0.02 (0.02- 0.002)	Int. II	0.02-0.01 (0.01- 0.002)	3B2	Cm	2A2 => 2 Pct.	2-19 Pct. of << 76mm	19-76 Pct.
0-1	A1	65.8	15.8	0.2 <sup>a</sup>	0.9 <sup>a</sup>	1.4	7.7	8.2		39.2	39.7						-			
1-5	A2	65.1	16.1	0.2	0.6	1.4	7.8	8.8		38.1	40.8						-			
5-26	Rg	60.4	21.6	0.3	0.6	1.3	7.1	8.7		38.6	39.4						3			
26-60+	C	60.8	25.1	0.8	1.0	1.3	4.7	6.3		35.8	34.5						15			
Depth (in.)	GAIa Organic carbon	Nitrogen Pct.	C/N Pct.	Carbonate as CaCO <sub>3</sub> Pct.	Ext. Iron B.B. Fe2O3 Pct.	4Alc 1/2 bar g/cc	4Ah Oven dry g/cc	401 COLE	Water content			4C1 WRD In/H	pH			8C1c (1:1) KCl H <sub>2</sub> O	8C1a (1:1)	5.0 5.2 4.7 4.9		
0-1	4.06	0.270	15		0.3				4B1c 1/2 bar g/cc	4B2 15 bar g/cc										
1-5	1.84	0.122	15		0.4															
5-26	0.36	0.048			0.6															
26-60+	0.13	0.024			1.8															
Depth (in.)	Extractable bases 5B1a					6H1a Ext. acidity meq/100 g	CEC		6G1d Ext. Al	Ratios to clay			8D3 Ca/Mg	Base saturation			5C3 Sum cation Pct.	5C1 NH <sub>4</sub> OAc Pct.	43 40 23 55	
0-1	6.6	1.2	0.2	0.2			10.8	19.0												
1-5	3.5	0.8	0.1	0.1			6.7	11.2												
5-26	1.8	0.2	0.1	0.1			7.5	9.7												
26-60+	5.1	0.4	0.1	0.1			4.6	10.3												
Depth (in.)	Clay Fraction Analysis 7Ab-d													Mt. Chl. V.m. M.i. Int. Qtz. Kl. Gt/mkt	7A2 X-ray	7A3	Mt. = Montmorillonite, Chl. = chlorite, V.m. = Vermiculite, M.i. = mica. Int. = interstratified layer, Qtz. = quartz, Kl. = kaolinite. Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.	a. Undecomposed organic matter in sand fraction.	43 40 23 55	
0-1																				
1-5																				
5-26	xx		xx																	
26-60+																				

Soil Type: Guthrie silt loam, level phase.

Soil No.: 854Tenn-16-19

Location: Coffee County, Tennessee. 4.0 miles south of Manchester on highway 55 to Belmont. 2.0 miles east of Belmont on gravel road to an abandoned farm road on south side of road. 400 yards south on old farm road to corner of large forested area. 200 yards southwest of northeast corner of forest

Beltsville  
Lab. No.

01, 02 1 to 0 inches. Forest litter and leaf mold.  
Not Sampled

A1 0 to 1 inch. Dark gray (10YR 4/1) very friable silt loam; weak fine crumb structure.  
551363

A2 1 to 5 inches. Gray (10YR 5/1) or dark grayish brown (2.5Y 4/2) very friable silt loam; weak fine to medium crumb structure; few fine faint yellowish brown mottles.  
551364

Bg 5 to 28 inches. Grayish brown (2.5Y 5/2) silty clay loam which is friable when moist but becomes hard or very hard when dry; massive in place, breaks to moderate fine to medium sub-

C 28 to 60 inches plus. Gray or light gray (10YR 6/1 - 7/1) firm silty clay with many medium to coarse prominent mottles of yellowish brown, strong brown, and brownish yellow, and a few yellowish red mottles in the lower part; massive to strong coarse angular blocky structure; contains a few small angular chart fragments which increase in size and numbers with depth.  
551366

SOIL Gathrie silt loam, level phase

SOIL Nos. 554Penn-16-20 LOCATION Coffee County, Tennessee

**SOIL SURVEY LABORATORY** Beltsville, Maryland

LAB. Nos. 551367 - 551370

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, mi = mica, Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

a Undecomposed organic matter in sand fractions

Soil Type: Guthrie silt loam, level phase.

Soil No.: 854Tenn-16-20

Location: Coffee County, Tennessee. 1.9 miles south of David Grocery at Hopewell on Maple Springs-Plainview-Hopewell Road. 100 feet west of road and 90 feet north of drainageway in forested area. Aerial photo 50-39.

Horizon and  
Beltsville  
Lab. No.

O1, O2 1 to 0 inches. Forest litter and leaf mold.  
Not Sampled

A1 0 to 1 inch. Dark gray (10YR 4/1) very friable silt loam; weak fine crumb structure.  
551367

A2 1 to 5 inches. Gray (10YR 5/1) or dark grayish brown (2.5Y 4/2) very friable silt loam; weak fine to medium crumb structure; few fine faint yellowish brown mottles.  
551368

Bg 5 to 26 inches. Grayish brown (2.5Y 5/2) silty clay loam which is friable when moist but becomes hard or very hard when dry; massive in place, breaks to moderate fine to medium sub-angular blocky structure; common fine to medium prominent mottles of yellowish brown (10YR 5/6).  
551369

C 28 to 60 inches plus. Gray or light gray (10YR 6/1 - 7/1) firm silty clay with many medium to coarse prominent mottles of yellowish brown, strong brown, and brownish yellow, and a few yellowish red mottles in the lower part; massive to strong coarse angular blocky structure; contains a few small angular chert fragments which increase in size and numbers with depth.  
551370

**SOIL SURVEY LABORATORY**  
Lincoln, Nebraska

LOCATION Fayette County, Tennessee

SOIL TYPE Henry Silt Loam

Lincoln LAB NOS. 12237 - 12246

SOIL NOS. S59Tenn-24-6

Soil type: **Heavy silt loam**  
 Soil No.: : System-28-6  
 Location: Fayette County, Tennessee, 5 miles northwest of Somerville on paved road by Moorman Gin, 300 yards southwest of road at Old Fowlers Store on David Fowler farm. Photo AIB-2P-44 (1950)

Vegetation and Use: Cultivated - grain sorghum.

Slope and Land Form: Nearly flat upland.

Drainage and Permeability: Poorly drained, very slow runoff and internal drainage; slow permeability.

Parent Material: Loess

Samples Collected by: Edwood Pedersen, George Phibbs, D. K. Springer, R. L. Flowers, R. K. Moore, E. C. Sease - October 16, 1959.

Profile Described by: D. K. Springer and E. C. Sease - October 16, 1959.

Horizon and  
Lincoln

Lab. No.	Depth	
Ap 12237	0 to 6 inches	Brown to dark brown (10YR4/3) silt loam, weak fine granular structure; very friable; common fine roots; many small dark brown and black hard concretions on surface and throughout horizon; clear smooth boundary. 4 to 7 inches thick.
A2g 12238	6 to 13 inches	Gray (10YR6/1-5/1) silt loam; weak fine platy structure; friable; common fine roots; many small soft and hard brown and black concretions; clear wavy boundary. 5 to 10 inches thick.
B2g 12239	13 to 18 inches	Gray (10YR5/1-6/1) silty clay loam with shades of grayish brown (10YR5/2); weak fine subangular blocky structure; friable; few fine roots; many small hard and soft brown and black concretions; clear wavy boundary. 4 to 9 inches thick.
B2g 12240	18 to 32 inches	Grayish brown (10YR 5/2) silty clay loam with few medium faint mottles of gray (10YR5/1-6/1); weak medium subangular blocky structure; friable; few small roots; few small brown hard concretions; gradual smooth boundary. 8 to 15 inches thick.
B3g 12241	32 to 47 inches	Gray (10YR5/1) silt loam with common medium faint mottles of gray (10YR5/1) and <del>yellowish brown (10YR5/2)</del> ; weak coarse angular blocky structure; friable; few small roots; few small brown and black small concretions; gradual smooth boundary. 14 to 16 inches thick.

blocky structure; friable; few small roots; few fine pores; common small hard and soft concretions; gradual smooth boundary. 14 to 16 inches thick.

332g 12242	47 to 61 inches	Mottled grayish brown (10YR5/2), gray (10YR5/1), yellowish brown (10YR5/4), dark yellowish brown (10YR4/4) and dark gray (10YR4/1) silty clay loam with pockets of silt loam; weak coarse angular blocky structure; friable; many small pores and old root channels filled with gray (10YR4/1) clay and black organic stains; common hard and soft brown and black small concretions; few large concretions; clear wavy boundary. 8 to 17 inches thick.
B3g 12243	61 to 80 inches	Dark yellowish brown (10YR4/4) silt loam with many medium faint mottles of grayish-brown (10YR5/2), gray (10YR5/1) and yellowish brown (10YR5/4); weak coarse angular blocky structure to massive; friable; common fine pores and root channels; root channels filled with gray (10YR4/1) clay; common dark reddish brown (5YR3/3) soft concretions; clear wavy boundary.
B3g 12244	80 to 107 inches	Dark yellowish brown (10YR4/4) silt loam with few streaks or tubes of grayish brown (10YR5/2); massive; firm in places; friable to crush; few small roots (probably trumpet vine roots); few small pores; few dark brown and black stains; common fine soft brown and black concretions, some are hard.
B3g 12245	80 to 107 inches	Gray (10YR5/1) silt vertical streaks 1 to 2½ inches in diameter, with few patches of dark gray (10YR4/1) clay; some of the vertical gray streaks may be old crayfish holes.
C1g 12246	107 to 145 plus inches	Brown (10YR5/3) silt loam with common fine faint mottles of light brownish gray (10YR5/2) and yellowish brown (10YR5/6); massive; friable; few small brown and black soft and hard concretions.

Remarks: Colors given are for moist soil. There was some discussion about the B horizons 32 to 107 inches, being a fragipan, not as dense as most fragipans. Some horizons have lower oven-dry than field-moist bulk density. The field-moist clods were air-dried and then remoistened to 30-cm. tension before being oven-dried and the volume determined. Wetting to 30-cm. tension against a weak confining pressure may result in irreversible expansion. The result would be lower oven-dry bulk density values than would be obtained were the clods oven-dried directly.

**SOIL SURVEY LABORATORY**  
**Lincoln, Nebraska**

LOCATION Fayette County, Tennessee

SOIL TYPE Henry Silt Loam

Lincoln LAB NOS. 12247 - 12256

SOIL NOS. 559Tenn-24-7

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1Bla			PARTICLE SIZE DISTRIBUTION (in mm.)			(per cent) 3Al			2A2	TEXTURAL CLASS	
			VERY COARSE SAND 2.1	COARSE SAND 1.0-5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY <0.002	INTERNATIONAL	II	III		
											0.2-0.02	0.02-0.002		
12247	0-8	Ap	1.7a	1.5a	0.6a	0.9a	1.0b	85.1	9.2	53.0	33.5	Tr.	sil	
12248	8-18	A2g1	3.3a	2.0a	0.6a	0.8a	0.7a	79.7	12.9	39.3	41.4	Tr.	sil	
12249	18-51	A2g2	1.7a	1.4a	0.6a	0.9a	0.7a	78.2	16.5	37.1	42.2	Tr.	sil	
12250	18-32	B2g1	0.6a	1.1a	0.6a	0.9a	0.7a	73.3	22.8	35.6	38.8	Tr.	sil	
12251	32-40	B2g2	0.5a	1.1a	0.5a	0.8a	0.9a	72.5	23.7	36.4	37.4	Tr.	sil	
12252	40-57	d B3g1	<0.1	0.2a	0.2a	0.4a	0.8a	80.4	18.0	40.5	40.9	Tr.	sil	
12253	40-57	e B3g1	0.5a	1.3a	0.7a	1.1a	0.9a	75.9	19.6	38.6	38.7	Tr.	sil	
12254	57-84	d B3g2	<0.1	0.2b	0.6c	1.4c	0.9c	80.2	16.7	42.9	38.8	Tr.	sil	
12255	57-84	e B3g2	0.3a	0.6a	0.6b	1.3b	1.0b	78.1	18.1	41.6	38.1	Tr.	sil	
12256	84-121+	C1	0.9a	1.4b	3.0	7.2	2.0	68.1	17.4	37.6	35.5	Tr.	sil	
PH			ORGANIC MATTER			6C1a			BULK DENSITY f			4E2		
			8C1a $\text{H}_2\text{O}$ 1:1	6Ala ORGANIC CARBON %	6Bla NITROGEN %	C/N	Free Iron as Fe <sub>2</sub> O <sub>3</sub>	Field State 4B4	30-Cm. 4Ala Water %	4B3 Water %	4Alc g/cc	4Alh g/cc	15-Bar Water %	
12247	5.3			0.66	0.065	10	2.4	16.0	1.42	24.4	1.42	1.43	5.6	
12248	4.9			0.17	0.026		2.1	17.2	1.48	24.2	1.44	1.46	6.0	
12249	5.4			0.14	0.025		2.0	16.4	1.48	25.6	1.45	1.48	9.2	
12250	5.1			0.14			1.5	18.4	1.54	25.0	1.47	1.56	11.4	
12251	5.1			0.10			1.8	16.3	1.56	25.9	1.47	1.54	12.7	
12252	5.7			0.07			2.0	13.6	1.46	31.6	1.37	1.44	10.5	
12253	5.6			0.11			2.0	12.2	1.62	24.5	1.52	1.59	10.7	
12254	7.0			0.12			1.9	11.3	1.57	26.0	1.47	1.55	9.2	
12255	6.9			0.12			1.7	9.2	1.64	24.4	1.50	1.60	10.1	
12256	7.3			0.10			1.6						8.5	
5A1a CATION EXCHANGE CAPACITY $\text{NH}_4\text{OAc}$			EXTRACTABLE CATIONS 5Bla			6N2b Ca Mg Na K H milliequivalents per 100g soil			5C3 Base Set.% on Sum Cations			5Cl Base Set.% on Sum Cations		
12247	7.9	4.2	0.7	0.1	0.1	5.8	47	64	5.1	10.9				
12248	8.0	2.1	1.2	0.1	0.1	5.8	38	44	3.5	9.3	1.8			
12249	10.6	2.3	2.7	0.7	0.2	7.8	43	56	5.9	13.7	0.8			
12250	13.3	2.6	3.6	0.9	0.2	9.5	43	55	7.3	16.8	0.7			
12251	16.4	4.2	5.4	1.3	0.3	9.3	55	68	11.2	20.5	0.8			
12252	13.6	4.9	5.0	1.4	0.2	6.3	65	84	11.5	17.8	1.0			
12253	13.8	4.6	5.0	1.4	0.2	6.3	64	81	11.2	17.5	0.9			
12254	11.9	5.4	4.4	1.5	0.2	3.9	75	97	11.5	15.4	1.2			
12255	15.1	5.8	5.2	1.6	0.2	4.1	76	85	12.8	16.9	1.1			
12256	8.9	4.6	3.0	1.2	0.1	3.2	74	100	8.9	12.1	1.5			

- a. Many Fe-Mn? bearing aggregates.  
b. Common Fe-Mn? bearing aggregates.  
c. Few Fe-Mn? bearing aggregates.

- d. Brown material.  
e. Gray material.  
f. See remarks in description.

Soil type: Heavy silt loam  
 Soil No.: 859Tern-24-7  
 Location: Fayette County, Tennessee, about 5 miles northwest of Somerville on State Highway 59. In field 50 feet north of highway about 100 yards east of dirt road between Fowler and Wilson farm. Photo ADB-2F-46 (1950)

Vegetation and Use: Cotton

Slope and Land Form: Nearly flat upland.

Drainage and Permeability: Poorly drained, very slow runoff and internal drainage; slow permeability.

Parent Material: Loess

Samples Collected by: Edwood Pedersen, George Phibbs, D. K. Springer, R. L. Flowers, Louis Duncan, R. K. Moore, W. C. Mangrum, and E. C. Space - October 17, 1959.

Profile Described by: E. C. Sease and D. K. Springer - October 17, 1959.

Horizon and

Lincoln

Lab. No.

Depth

Ap 12247 0 to 6 inches Dark grayish brown (10YR4/2) silt loam; weak fine granular structure; very friable; common fine roots; common small hard concretions on surface and throughout this layer; bottom inch of Ap weak fine platy structure; appears to be plow pan; clear smooth boundary. 7 to 9 inches thick.

A2g1 12248 8 to 18 inches Gray (10YR5/1-6/1) silt loam; weak coarse platy breaking into weak fine granular structure; when picked out it breaks out into very weak subangular blocky structure; very friable; many medium pores; many fine and medium soft and hard brown concretions; clear wavy boundary. 8 to 13 inches thick.

A2g2 12249 18 to 51 inches Gray (10YR5/1-6/1) silt loam with some light brownish gray (10YR6/2); weak medium subangular blocky structure breaking into weak fine granular structure; very friable; common small brown soft and hard concretions; abrupt irregular boundary; this is a tongue about 3 to 6 inches in diameter and extends from 18" to 51". It is probably an old burrow that has been filled with material from above.

B2g1 12250 18 to 32 inches Gray (10YR6/1-5/1) silty clay loam; with few medium faint mottles of grayish brown (10YR5/2) weak medium subangular blocky structure; friable, slightly plastic and slightly sticky; hard; many fine pores; common small brown and black

B2g2 12251 32 to 40 inches Grayish brown (10YR5/2) silty clay loam; with common coarse faint mottles of gray (10YR6/1) and yellowish brown (10YR5/6); weak coarse prismatic structure breaking into weak coarse angular blocky structure; firm; slightly plastic and sticky; hard; patches of dark gray (10YR4/1) and black (5YR2/1) on some pedes; few small pores; common small brown and black hard and soft concretions; clear wavy boundary. 8 to 12 inches thick.

B3g1 12252 40 to 57 inches Dark yellowish brown (10YR4/4-3/1) silt loam, with many medium faint mottles or streaks of grayish brown (10YR5/2), pale brown (10YR6/3) and gray (10YR6/1); weak medium angular blocky structure to massive; friable; firm in place; gray (10YR6/1) clay in old root channels; few small pores; few dark brown (10YR3/3) soft concretions; clear wavy boundary. 7 to 17 inches thick.

B3g2 12254 57 to 84 inches Dark yellowish brown (10YR4/4) silt loam; many medium faint mottles of yellowish brown (10YR5/6), light brownish gray (10YR6/2), and pale brown (10YR6/3); dark gray (10YR4/1) along old root channels; weak coarse angular blocky structure to massive; few black (5YR2/1) patches along old root channels and cracks; grayish brown (10YR5/2) vertical streaks about 1-1½ inches in diameter and from 6 to 10 inches apart; (these appear to be old crayfish holes.)

C1 12256 84 to 121 inches Yellowish brown (10YR5/4) silt loam; massive; very friable; grayish brown (10YR5/2) silt loam in vertical streaks about 1-1½ inches in diameter and about 6 to 10 inches apart; (These appear to be old crayfish holes.)

NOTE: Evidence of many crayfish holes all through this profile. They were more noticeable below 40 inches mainly due to the contrast in color of the material in the old holes and the color of the horizon. Cotton roots did not penetrate the A2 horizon; an occasional trumpet vine root was found

SOIL Holston loam, undulating phase SOIL Nos. 554Tenn-16-11 LOCATION Coffee County, Tennessee

**SOIL SURVEY LABORATORY — Beltsville, Maryland** **LAB. Nos.** **551335 — 551338**

Depth (in.)	Horizon	Size class and particle diameter (mm) 3A1											3B2	Coarse fragments 3B1	
		Total			Sand				Silt			Int. II	Cm		
		Sand (2-0.05)	Silt (0.05- 0.002)	Clay (< 0.002)	Very coarse (> 1)	Coarse (1-0.5)	Medium (0.5-0.25) or (0.25-0.1)	Fine (0.1-0.05)	Very fine (0.05-0.02)	Int. III (0.02- 0.01)					

Soil Type: Holston loam, undulating phase.

Soil No.: 854Temp-16-11

Location: Coffee County, Tennessee. 0.75 mile south of Ragsdale School on gravel road in first forested area on east side of road. 20 feet east of road at northwest corner of forest. Aerial photo 6G-135.

Horizon and  
Belttsville  
Lab. No.

01, 02 1 to 0 inches. Forest litter and leaf mold.  
Not Sampled

A1 0 to 1 inch. Grayish brown (10YR 5/2) very friable loam; weak fine crumb structure.  
551335

A2 1 to 8 inches. Light yellowish brown (10YR 6/4) very friable loam; weak to moderate medium  
551336 crumb structure.

B1 8 to 11 inches. Yellowish brown (10YR 5/4 - 5/6) very friable heavy loam or silt loam;  
Not Sampled moderate medium crumb structure.

B2 11 to 36 inches. Yellowish brown (10YR 5/6) very friable clay loam or silt loam; weak medium  
551337 subangular blocky structure; a few grayish mottles in lower part.

C 36 inches plus. Mottled red, yellow and gray friable heavy loam or clay loam; weak coarse sub-  
551338 angular blocky structure; common medium prominent mottles; a few chert and quartz gravel  
present.

SOIL Holston loam, undulating phase      SOIL Nos. 85-Tenn-16-12      LOCATION Coffee County, Tennessee

**SOIL SURVEY LABORATORY Beltsville, Maryland** TAB Nos. **551339 - 551342**

Depth	Horizon	Size class and particle diameter (mm) 3AI															
		Total			Sand				Silt			Int. II	Int. III	3B2	Coarse fragments 3B1		
		Sand	Silt	Clay	Very coarse	Coarse	Medium	Fine	Very fine	Int. III	2A2	2A1	2-10	10-25			

Soil Type: Holston loam, undulating phase.

Soil No.: S54Tenn-16-12

Location: Coffee County, Tennessee. 0.5 mile west of Bradley Creek and 100 yards northeast of 90° curve on gravel road near county line. 50 yards east of gravel road and 10 feet north of dirt road in woods. (Elliot Farm) Aerial photo 6G-155.

Horizon and  
Beltsville  
Lab. No.

O1, O2 1 to 0 inches. Forest litter and leaf mold.  
Not Sampled

A1 0 to 1 inch. Grayish brown (10YR 5/2) very friable loam; weak fine crumb structure.  
551339

A2 1 to 8 inches. Light yellowish brown (10YR 6/4) very friable loam; weak to moderate medium  
551340 crumb structure.

B1 8 to 11 inches. Yellowish brown (10YR 5/4) very friable heavy loam or silt loam; moderate  
Not Sampled medium crumb structure.

B2 11 to 34 inches. Yellowish brown (10YR 5/4 - 5/6) friable clay loam or silt loam; weak medium  
551341 subangular blocky structure.

C 34 inches plus. Mottled red, yellow and gray friable clay loam or heavy loam; weak coarse  
551342 subangular blocky structure; a few chert and quartz gravel present.

SOIL Buntington silt loam, undulating phosphatic phase SOIL Nos. 554Tenn-16-17 LOCATION Coffee County, Tennessee  
SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551357 - 551359

Depth (In.)	Horizon	Size class and particle diameter (mm) SAI											3B2 Cm	Coarse fragments 3B1			
		Total			Sand				Silt					2A2 ≥ 2 Pct.	2-19 Pct. of <= 76mm	19-76	
		Sand (2-0.05)  Pct. of <= 2 mm	Silt (0.05- 0.002)  Pct. of <= 2 mm	Clay (< 0.002)  Pct. of <= 2 mm	Very coarse (2-1)  Pct. of <= 2 mm	Coarse (1-0.5)  Pct. of <= 2 mm	Medium (0.5-0.25)  Pct. of <= 2 mm	Fine (0.25-0.1)  Pct. of <= 2 mm	Very fine (0.1-0.05)  Pct. of <= 2 mm	Int. III (0.2-0.02)  Pct. of <= 2 mm	Int. II (0.02- 0.002)  Pct. of <= 2 mm	(2-0.1)  Pct. of <= 2 mm					
0-12		70.2	22.3	0.2	0.3	0.3	1.5	5.2	41.9	34.5				-			
12-30		67.0	24.5	0.6	0.7	0.8	2.0	4.4	45.3	27.3				tr.			
30-36+		53.2	35.7	1.0	1.2	1.1	2.7	5.1	33.9	26.0				3			

Soil Type: Huntington silt loam, undulating phosphatic phase.

Soil No.: S54Tenn-16-17

Location: Coffee County, Tennessee. 3.0 miles west of Noah to private road on west side of Noah Fork Creek. 25 feet west of fence parallel to private road and 50 feet north of main gravel road. Aerial photo 5G-50.

Horizon and  
Belleville  
Lab. No.

551357 0 to 12 inches. Dark brown (10YR 3/3) very friable silt loam; weak fine crumb structure.

551358 12 to 30 inches. Dark brown (10YR 3/3) friable heavy silt loam or silty clay loam; weak to moderate medium crumb structure.

551359 30 to 36 inches plus. Dark brown (10YR 4/3 - 3/3) heavy silty clay loam with a few fine faint grayish mottles; grades to stratified layers of loam, fine sandy loam and silt loam material containing varying amounts of gravel.

SOIL SURVEY LABORATORY  
Lincoln, Nebraska

LOCATION Putnam County, Tennessee

SOIL TYPE Huntington silt loam

LAB NOS. 12692 - 12694

SOIL NOS. S59Tenn-71-31

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a						PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1			INTERNATIONAL II 0.2-0.02	INTERNATIONAL III 0.2-0.02	2A2 > 2 (<19 mm)	TEXTURAL CLASS	
			VERY COARSE SAND 2-1	COARSE SAND .1-.05	MEDIUM SAND .05-.25	FINE SAND .025-.10	VERY FINE SAND .010-.005	SILT .005-.002	CLAY <.002							
12692	0-12	Ap	0.5a	0.7	1.6	8.9	11.2	54.6	22.5	37.6	34.3	-	-	-	sil	
12693	12-25	C11	0.2a	1.2	3.3	17.4	15.9	41.9	20.1	45.2	24.3	Tr.	1	-		
12694	25-43	C12	0.8	5.0	12.6	34.9	14.6	20.2	11.9	42.9	10.6	Tr.	fsl	-		
PH			ORGANIC MATTER			6C1a Free Iron as Fe <sub>2</sub> O <sub>3</sub> % H <sub>2</sub> O 1:1	6B1a Organic Carbon %	6B1a Nitrogen %	C/N	BULK DENSITY			4B2 Field State Water %	4B3 30-Om. Water %	4A1c O.D. g/cc	4A1b 15-Bar Water %
12692	6.9		0.80	0.078	10		2.2	20.8	1.59	21.5	1.59	1.66	9.5			
12693	5.9		0.32	0.042	8		1.8	17.4	1.66	18.9	1.66	1.72	7.9			
12694	5.4		0.13				1.2						4.9			
EXTRACTABLE CATIONS 5B1a			5A1a CATION EXCHANGE CAPACITY NH <sub>4</sub> OAc	6N2b Ca	6P2b Mg	6P2a Na	6P2a K	6H1a H	5C3 Base Sat. % on Sum Cations	5C1 Base NH <sub>4</sub> OAc	5B1a Sum Ext. Bases	5A3a Sum Ext. Bases Cations me/100g	6E1a CaCO <sub>3</sub> Ext. equiv. alient %			
12692	10.5	9.8			0.7	<0.1	0.1	3.9	73	101	10.6	14.5	< 1			
12693	7.3	5.1			0.2	<0.1	0.1	4.4	55	74	5.4	9.8				
12694	3.8	2.5			0.3	<0.1	0.1	2.7	52	76	2.9	5.6				

a. Few Fe-Mn? bearing aggregates.

VACUT

D1510

Soil type: Huntington silt loam

Soil No.: S59Tenn-71-31

Location: Putnam County, Tennessee. 1 mile southwest of Taylors Seminary along Town Creek. 100 yards south of gravel road; 40 feet west of county line. Photo AEW-5N-180.

Vegetation and Use: Annual lespedeza.

Slope and Land Form: Uneroded 2 percent slope; first bottom.

Drainage and Permeability: Well drained; surface runoff slow to medium; moderate permeability.

Parent Material: Recent alluvium derived largely from cherty, shaly, and sandy limestones.

Samples Collected by: J. A. Elder, G. T. Jackson, S. R. Bacon, B. C. Cox - December 15, 1959.

Profile Described by: G. T. Jackson, December 15, 1959.

Horizon and

Lincoln

Lab. No. Depth

Ap	0 to 12	Brown (10YR4/3) silt loam with weak fine granular structure; very friable; common fine roots; gradual, smooth boundary.
12692	inches	

C11	12 to 25	Dark yellowish brown (10YR4/4) silt loam with a somewhat massive structure that breaks into weak coarse granular microstructure; friable; common fine roots; gradual wavy boundary.
12693	inches	

C12	25 to 43	Yellowish brown (10YR5/4) sandy loam; weak coarse granular microstructure; nearly massive; friable; gradual, wavy boundary.
12694	inches	

Du	43 inches plus (not sampled)	Strong brown (7.5YR5/6) coarse loamy sand; structureless; loose.
----	---------------------------------	--

Remarks: Colors and consistency are for moist soil.

**SOIL SURVEY LABORATORY**  
Lincoln, Nebraska

LOCATION Putnam County, Tennessee

SOIL TYPE Huntington silt loam

LAB NOS. 12695 - 12697

SOIL NOS. S59Tenn-71-32

LABORATORY NUMBER	DEPTH INCHES	HORIZON	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)						3A1			TEXTURAL CLASS	
			VERY COARSE SAND 2.1	COARSE SAND 1.0-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY <0.002	INTERNATIONAL II 0.2-0.02	III 0.02-0.002 (<1mm)	IV >2	
12695	0-12	Ap	0.2a	0.9	2.0	11.3	11.5	56.7	17.4	36.3	39.8	Tr.	sil
12696	12-25	C11	0.1a	1.7	4.7	28.4	17.3	37.7	10.1	50.0	22.5	Tr.	sil/1
12697	25-35	C12	0.1	0.7	4.0	36.3	21.4	29.4	8.1	57.1	17.0	Tr.	fel
	pH		6C1a	ORGANIC MATTER			BULK DENSITY				WATER CONTENT		
	8C1a		Free Iron as H <sub>2</sub> O 1:1	6A1a ORGANIC CARBON %	6E1a NITROGEN %	C/N	Field Water %	State Water %	30-Cm. Water %	O.D. g/cc	4B1b 1/3- Bar	4B2 15-Bar	
12695	6.7		1.8	1.08	0.096	11	20.9	1.57	21.9	1.58	1.62	20.1	7.5
12696	5.8		1.0	0.71	0.059	12	20.8	1.54	21.4	1.56	1.58	16.0	4.8
12697	5.7		0.8	0.29			20.0	1.54	20.1	1.56	1.57	12.3	3.7
	5A1a EXCHANGE CAPACITY NH <sub>4</sub> OAc		EXTRACTABLE CATIONS 5B1a				5C3 Base Sat. % on Sum Cations	5G1 Base Sat. % NH <sub>4</sub> OAc Cations	5H1a Sum Ext. Bases me	5A3a Sum Ext. Cations 100g	6E1a CaCO <sub>3</sub> equiv alient %		
12695	7.7	7.3	0.2	<0.1	0.1	3.6	68	99	7.6	11.2	<1		
12696	4.6	2.2	0.3	<0.1	<0.1	5.8	30	54	2.5	8.3			
12697	2.5	1.0	0.1	<0.1	<0.1	3.4	24	44	1.1	4.5			

a. Few Fe-Mn? bearing aggregates.

Soil type: Huntington silt loam

Soil Nos. : S59Tenn-71-32

Location: Putnam County, Tennessee; 3/4 mile southeast of Ditty; 100 yards north of gravel road, (Scott Farm). Photo AEW-5N-181.

Vegetation and Use: Fescue and white clover pasture.

Slope and Land Form: Uneroded 2 percent slope; first bottom.

Drainage and Permeability: Well drained; surface runoff slow to medium; moderate permeability.

Parent Material: Recent alluvium derived largely from cherty, shaly and sandy limestones.

Samples Collected by: J. A. Elder, G. T. Jackson, S. R. Bacon, B. C. Cox.

Profile Described by: George T. Jackson December 7, 1959

Horizon and

Lincoln

Lab. No. Depth

Ap 12695	0 to 12 inches	Brown (10YR5/3) silt loam with weak medium granular structure; very friable; many fine roots; gradual wavy boundary.
-------------	-------------------	--

C11 12696	12 to 25 inches	Dark grayish brown (10YR4/2) loam with weak coarse granular structure; very friable; many fine roots; gradual wavy boundary.
--------------	--------------------	--

C12 12697	25 to 35 inches	Variegated light yellowish brown (10YR6/4) and yellowish brown (10YR5/4) fine sandy loam; variegations are few medium faint; weak coarse granular structure; few roots; gradual wavy boundary.
--------------	--------------------	--

Du (not sampled)	35 to 50 inches plus faint variegations of strong brown (7.5YR5/6) and pale brown (10YR6/3); single grain structure; very friable; occasional fine roots.	Yellowish brown (10YR5/4) loamy fine sand with few medium faint variegations of strong brown (7.5YR5/6) and pale brown (10YR6/3); single grain structure; very friable; occasional fine roots.
---------------------	---	--

Remarks: Colors and consistency are for moist soil.

SOIL SURVEY LABORATORY  
Lincoln, Nebraska

LOCATION Fayette County, Tennessee

SOIL TYPE Tula fine sandy loam

Lincoln LAB NOS. 12622 - 12630

SOIL NOS. S59Tenn-24-12

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1Bla. PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1										2A2 TEXTURAL CLASS		
			VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY <0.002	INTERNATIONAL					
			II	III	> 2										
12622	0-6	Ap	<0.1	1.1	4.7	17.4	5.5	63.8	7.5	54.1	23.4	-	sil		
12623	6-14	C11	<0.1	1.4	12.2	44.8	4.0	30.7	6.9	38.6	10.9	-	fsl		
12624	16-26	C12	<0.1	0.7	4.1	19.2	5.3	58.9	11.8	49.4	24.0	-	sil		
12625	26-35	C13	<0.1	0.4	2.4	18.8	7.9	58.2	12.3	56.0	21.5	-	sil		
12626	35-43	Alb	0.1	0.6	4.0	19.1	6.1	59.7	10.4	45.9	27.7	-	sil		
12627	43-55	C11b	<0.1	0.5	3.0	18.1	4.5	63.5	10.4	46.6	30.2	-	sil		
12628	55-67	C12b	0.2	3.1	8.4	22.4	4.6	52.2	9.1	41.6	24.3	-	sil		
12629	67-84	C13b	0.5	4.1	16.2	42.9	3.4	27.3	5.6	31.2	12.5	-	fsl		
12630	84-96	Du	0.8	10.6	29.2	42.5	2.1	12.6	2.2	20.4	5.1	-	ls		
pH			ORGANIC MATTER			6C1a	BULK DENSITY a			4B2					
	8C1a $\text{H}_2\text{O}$ 1:1		6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Free Iron as Fe <sub>2</sub> O <sub>3</sub>	Field 4B4 Water	State 4Ala Water	30-Cm. 4B3 Water	0.D. 4Alc Water	15-Bar 4Ah Water				
12622	5.1		0.40	0.041	10	0.9	10.5	1.57	19.4	1.56	1.58	3.2			
12623	5.1		0.14	0.018		0.8	6.3	1.46	19.1	1.44	1.46	3.0			
12624	4.9		0.18	0.027		1.2	10.9	1.43	25.5	1.41	1.44	4.2			
12625	5.0		0.18			1.3	13.7	1.45	23.2	1.44	1.46	4.4			
12626	5.4		0.20			1.0	15.1	1.51	20.4	1.47	1.51	4.8			
12627	5.5		0.21			0.9	15.9	1.52	22.0	1.48	1.51	4.8			
12628	5.3		0.17			1.0	13.0	1.68	16.6	1.66	1.68	4.4			
12629	5.4		0.09			0.7	5.9	1.70	12.8	1.65	1.66	2.5			
12630	5.4		0.04			0.3						1.0			
NH <sub>4</sub> OAc	5A1a EXCHANGE CAPACITY milliequivalents per 100g soil			EXTRACTABLE CATIONS 6N2D Ca Mg Na K H milliequivalents per 100g soil			5B1a Base Sat. % in Sum Cations NH <sub>4</sub> OAc < me/100 g >	5C1 Base Sat. % in Sum Cations NH <sub>4</sub> OAc < me/100 g >	5B1a Sum Ext. % Bases Cations NH <sub>4</sub> OAc < me/100 g >	5A3a Sum Ext. % Bases Cations NH <sub>4</sub> OAc < me/100 g >	8D3 Ca/Mg				
12622	4.5	1.7	1.0	<0.1	0.2	3.9	43	64	2.9	6.8	1.7				
12623	3.3	1.2	1.0	<0.1	0.1	2.9	44	70	2.3	5.2	1.2				
12624	5.1	1.7	1.6	<0.1	0.1	4.8	41	67	3.4	8.2	1.1				
12625	5.4	1.9	1.7	0.1	0.1	4.1	48	70	3.8	7.9	1.1				
12626	5.0	1.8	1.3	0.1	0.1	4.4	43	66	3.3	7.7	1.4				
12627	5.0	1.8	1.0	0.1	0.1	4.6	39	60	3.0	7.6	1.8				
12628	4.5	1.4	1.2	0.1	0.1	3.9	42	62	2.8	6.7	1.2				
12629	2.8	0.8	0.6	0.1	0.1	3.1	34	57	1.6	4.7					
12630	1.2	0.3	0.4	<0.1	<0.1	4.1	14	58	0.7	4.8					

a. See remarks in description.

**Soil type:** Dark fine sandy loam  
**Soil No.:** 5592mm-24-12  
**Location:** Payette County, Tennessee, 9 miles south of Somerville, 1/2 mile west of State Highway No. 76 on gravel road, 75 yards south of road and 60 yards east of Hargis Creek on Dave Marsh farm. Photo ADB-2F-12(1950)

**Vegetation and Use:** Cotton - cultivated.

**Slope and Land Form:** Nearly level (0-1 percent) bottom land.

**Drainage and Permeability:** Moderately well drained; moderate runoff and moderate permeability.

**Parent Material:** Alluvium washed from loess and coastal plain material.

**Samples Collected by:** R. L. Flowers; W. C. Mangrum; R. K. Moore; Louis Duncan and E. C. Sease - November 13, 1959.

**Profile Described by:** E. C. Sease - November 13, 1959.

<b>Horizon and</b>			
<b>Lincoln</b>	<b>Lab. No.</b>	<b>Depth</b>	
	Ap	0 to 6 inches	Yellowish brown (10YR5/4) fine loam; weak fine granular structure; very friable; few fine roots; clear smooth boundary. 5 to 8 inches thick.
	CII 12623	6 to 14 inches	Dark yellowish brown (10YR4/4) fine sandy loam; weak fine granular structure; very friable; few thin layers of sand (5 to 10 mm thick stratified); abrupt smooth boundary. 6 to 8 inches thick.
	On (Not sampled)	14 to 16 inches	Very pale brown (10YR6/4) sand; single grain, loose; abrupt smooth boundary. 2 to 3 inches thick.
	CI2 12624	16 to 26 inches	Yellowish brown (10YR5/4) loam; (stratified sand and silt); thin layers of stratifications and mottles of pale brown (10YR6/3), light yellowish brown (10YR6/4) and light brownish gray (10YR6/2) massive silt layers give the appearance of platy structure; very friable; clear smooth boundary. 10 to 12 inches thick.
	CI3 12625	26 to 35 inches	Brown (10YR4/3) to yellowish brown (10YR5/4) loam; very thin layers of silt and sand somewhat platy like; massive; very friable; abrupt smooth boundary. 8 to 9 inches thick.
	AIB 12626	35 to 43 inches	Dark brown (10YR3/3) to dark yellowish brown (10YR3/4) silt loam; weak fine granular structure to massive; very friable; many small pores and holes; abrupt smooth boundary. 6 to 8 inches thick.
	CI1b 12627	43 to 55 inches	Dark brown (10YR3/3) loam; common medium faint mottles of grayish brown (10YR5/2) and brown (10YR5/3); weak medium subangular blocky structure to massive; friable; interior of ped dark brown (10YR3/3); ped coated with grayish brown (10YR5/2) silt also along holes and pores; common pores or voids and worm channels; lower part of this layer is vesicular like; clear smooth boundary. 10 to 14 inches thick.
	CI2b 12628	55 to 67 inches	Brown (10YR4/3) loam; with few medium faint mottles of brown (10YR5/3) grayish brown (10YR5/2) and dark yellowish brown (10YR3/4); massive; slightly brittle; when crushed breaks into weak fine granular structure; very friable; many small pores; many medium holes or voids; somewhat vesicular like; clear smooth boundary. 12 to 14 inches thick.
	CI3b 12629	67 to 84 inches	Brown (10YR4/3) sandy loam; with common medium faint mottles of brown (10YR5/3), dark yellowish brown (10YR4/4) and grayish brown (10YR5/2); massive; very friable; common small segregations of dark brown (10YR3/3); few pockets of light yellowish brown (10YR6/4) sand; diffuse smooth boundary.
	Ds 12630	84 to 96 inches plus	Light yellowish brown (10YR6/4) sand; single grain; loose. (Bulk sample - no clod samples)

**Remarks:** Colors given are for moist soil. The surface texture of this profile is not fine sandy loam, but areas with fine sandy loam textures are in delineations of this mapping unit. The delineations of this mapping unit are predominantly fine sandy loam. Some horizons have lower oven-dry than field-moist bulk density. The field-moist clods were air-dried and then remoistened to 30-cm. tension before being oven-dried and the volume determined. Wetting to 30-cm. tension against a weak confining pressure may result in irreversible expansion. The result would be lower oven-dry bulk density values than would be obtained were the clods oven-dried directly.

SOIL Jefferson loam

SOIL Nos. 853Tenn-5-14

LOCATION Blount County, Tenn.

SOIL SURVEY LABORATORY Beltsville, Maryland

LAB. Nos. 53747-53750

Soil Type: Jefferson loam

Soil No.: S53Tenn-5-14

Location: Blount County, Tennessee. 1 mile east of Montvale Springs.

Vegetation and land use: Idle - abandoned field. Virginia Pine sprouts and weeds.

Horizon and  
Beltsville  
Lab. No.

Ap 0 to 7 inches. Light brownish gray (10YR 6/2) or pale brown (10YR 6/3) very friable loam.  
53747

A3 7 to 14 inches. Light yellowish brown (10YR 6/4) to yellowish brown (10YR 5/6) very friable  
53748 loam. Moderate medium crumb structure.

B2 14 to 33 inches. Strong brown (7.5YR 5/8) friable clay loam to silty clay loam; moderately  
53749 developed fine to medium blocky structure.

C 33 to 54 inches. Yellowish red (5YR 5/8) friable clay loam with a few distinct brownish  
53750 yellow mottles; moderate fine to medium blocky structure.

SWI Jefferson locn

SOIL No. 853Tenn-5-20 LOCATION Blount County, Tennessee

**SOIL SURVEY LABORATORY Beltsville, Maryland**

LAB. Nos. 53768-53771

Soil Type: Jefferson loam

Soil No.: S53Tenn-5-20

Location: Blount County, Tennessee. 6 miles east of Union Grove.

Vegetation and land use: Hay. Lepidium and weeds.

Horizon and  
Beltsville  
Lab. No.

Ap 0 to 9 inches. Light yellowish brown (2.5Y 6/4) very friable loam.  
53768

B1 9 to 20 inches. Brownish yellow (10YR 6/8) very friable loam; weakly fine blocky structure.  
53769

B2 20 to 34 inches. Brownish yellow (10YR 6/8) to reddish yellow (7.5YR 6/8) friable sandy clay  
53770 loam; weakly fine and medium blocky structural aggregates.

C 34 to 54 inches. Reddish yellow (7.5YR 6/8) friable sandy clay loam; numerous prominent  
53771 brownish yellow (10YR 6/6) mottles; moderately developed medium to fine blocky structure.

**SOIL SURVEY LABORATORY** Lincoln, Nebr. December 1958

**SOIL TYPE** Landisburg **LOCATION** Loudon County, Tennessee  
silt loam

**SOIL NOS.** S58Tenn-53-1 **LAB. NOS.** 7806-7814

1B1b **PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)** 3A1

361

Soil type: Landisburg silt loam  
Soil Nos. : 858Tenn-53-1  
Location: Loudon County, Tennessee; three miles west of Burton Hill in the southern part of Loudon County, east of the Little Tennessee River; elevation about 930 feet. (Field Sheet ANU IL-74).  
Topography: The sampling site is on a uniform slightly concave slope about 5 percent in gradient. The uniform slope is about 900 feet long and is terminated by slightly steeper areas at the upper and lower end. According to the owner, the field was in corn about three years ago; neither fertilizer nor lime was applied at that time, nor has any fertilizer or lime ever been applied to the knowledge of the owner. Field has not been used since and is in weeds at the present time.  
Physiography: Colluvial material deposited in a number of cycles of deposition.  
Sampled by: L. T. Alexander, Joe A. Elder, R. H. Jordan, and Klaus W. Flach, April 7, 1958.  
Described by: Klaus W. Flach.

Horizon and  
Lincoln  
Lab. Number

Ap 7806	0 to 9 inches. Dark grayish brown (10YR 4/2 to 2.5Y 4/2) silt loam; weak to moderate fine and very fine granular structure; loose; abrupt and smooth boundary.
E1 7807	9 to 15 inches. Light olive brown to yellowish brown (10YR 5/4 to 2.5Y 5/4) silt loam; weak fine angular blocky structure with almost continuous very weak and nonshiny clay flow surfaces; weakly vesicular; very friable; gradual and smooth boundary.
B2 7808	15 to 22 inches. Light olive brown to light yellowish brown (2.5Y 5/4 to 10YR 6/4) heavy silt loam on <del>silty clay loam with few fine mottles</del>

than in the E1 horizon; friable; clear and smooth boundary.

B2m1 7809	22 to 25 inches. Light olive brown to grayish brown (2.5Y 5/4 to 2.5Y 5/2) silt loam with many medium and distinct light gray (2.5Y 6/1) and few fine and prominent yellowish brown (10YR 5/6) mottles; weak medium platy structure; very firm; the pedes are very brittle; about 10 percent of the mass consists of subangular chert fragments of .5 centimeter average diameter; irregular and clear boundary. This horizon is 2 to 9 inches wide and extends in streaks into the B2m2 and B3 horizons to depth of 40 inches. The streaks are about 15 inches apart.
B2m2 7810	25 to 31 inches. Grayish brown to light brownish gray (2.5Y 5/2 to 6/2) cherty silt loam with common large and distinct mottles of yellowish brown (10YR 5/4) and discontinuous prominent dark yellowish brown (10YR 3/4) clay skins; weak to moderate coarse platy structure; firm; brittle; abrupt and wavy boundary.
B31 7811	31 to 47 inches. Strong brown (7.5YR 5/6) silt loam with common coarse and medium prominent gray (2.5Y 5/1) mottles and dark grayish brown (10YR 4/2 to 3/3) clay skins on the surface; weak to moderate medium platy structure; friable; gradual and wavy boundary.
B32 7812	47 to 54 inches. Yellowish red (5YR 5/6) silt loam with many (about 40 percent of the surfaces) coarse and distinct yellowish brown (10YR 5/6) and few fine and medium prominent gray (2.5Y 5/1 to N 5/1) mottles; very weak medium platy structure that breaks readily to very weak medium blocky structure; gradual and wavy boundary.
C 7813	54 to 60 inches. Yellowish red (5YR 5/6) silty clay loam with many common and distinct yellowish brown (10YR 5/6) and few fine and medium prominent gray (2.5Y 5/2 to N 5/1) mottles; massive; very firm.
7814	25 to 40 inches. Tongue material of B2m2 horizon.

**SOIL SURVEY LABORATORY** Lincoln, Nebr. December 1958

**SOIL TYPE** Landisburg **LOCATION** Loudon County, Tennessee  
silt loam

**SOIL NOS.** S58Tenn-53-10 **LAB. NOS.** 7868-7874

DEPTH INCHES	HORIZON	1B1a	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)						3A1	3A2	TEXTURAL CLASS	
			VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY	> 2 (<19mm)		
0-9	Ap	1.5a	3.8a	7.1a	12.1a	7.5a	55.7	12.3	28.1	39.4	9	silt
9-17	B1	2.7a	4.0a	7.2a	14.0a	6.0a	49.8	16.3	26.8	35.0	5	1
17-26	B21	4.7a	5.9a	10.7a	18.5a	5.7a	37.0	17.5	25.5	24.7	14	1
26-33	B22	7.7a	6.3a	12.8a	22.8a	5.8a	22.4	21.2	22.1	16.2	14	1

Soil type: Landisburg silt loam

Soil No.: SS3Bmn-53-10

Location: Loudon County, Tennessee; 1200 feet west of Corinth Church; elevation is about 990 feet. (Field Sheet ANU-II-9b.)

Topography: The sampling site is on an almost perfectly even 4 percent south slope. About 200 feet north of the sampling site the slope steepens to 10 percent; this slope is occupied by the Fullerton soil. About 100 feet south of the sampling site there is a large level depression occupied by the poorly drained Robertsville soil.

Physiography: Colluvial material deposited in a number of successive cycles.

Vegetation: This is an old field which had not been cultivated for a number of years; only weeds growing at the present time.

Sampled by: Joe A. Elder, R. H. Jordan, and Klaus W. Flach, April 11, 1958.

Described by: Klaus W. Flach.

Horizon and  
Lincoln  
Lab. Number

Ap 7868 0 to 9 inches. Dark grayish brown (2.5Y 4/2 to 10YR 4/2) silt loam; weak fine granular structure; loose; abrupt and smooth boundary.

R1 7869 9 to 17 inches. Light olive brown (2.5Y 5/4) to yellowish brown (10YR 5/4) silt loam; weak fine and medium subangular blocky structure; very friable; clear and smooth boundary.

R21 7870 17 to 26 inches. Grayish brown (2.5Y 5/2) to brown (10YR 5/3) clay loam with many fine slightly grayer mottles; weak fine and medium blocky to subangular blocky structure; friable but somewhat brittle; a few fine chert fragments occupy about 5 percent of the soil mass; abrupt and wavy boundary. This horizon extends in tongues which are about 15 inches apart and 2 inches wide down to a depth of 42 inches into the underlying horizons.

R22 7871 26 to 33 inches. Strong brown (7.5YR 5/6) light clay loam with many large and prominent light brownish gray (2.5Y 6/2) mottles; weak medium platy structure that breaks readily into moderate medium angular blocky; many weak clay flow surfaces on the strong brown areas; firm; very brittle; about 25 percent of the soil mass consists of fine chert fragments; clear and smooth boundary.

R22m 7872 33 to 41 inches. Variegated dark red (10R 3/6) and yellowish red (5YR 5/6) clay loam with common

~~large~~ ~~light brownish gray~~ ~~streaks~~ ~~in~~ ~~the~~ ~~soil~~ ~~mass~~

massive, with discontinuous but distinct clay flow surfaces; firm; very brittle; contains about 15 percent chert fragments; gradual and smooth boundary.

B3 7873 41 to 47 inches. Variegated dark red (10R 3/6) and yellowish red (5YR 5/6) clay loam with many large distinct mottles of light brownish gray (10YR 6/2); mottles in indefinite streaks; weak fine angular blocky structure with some plateness in lower part; friable; a few thin clay skins; chert fragments fewer and smaller than in R22 horizon; gradual and smooth boundary.

C 7874 47 to 60 inches. Dominantly dark red (2.5YR 3/6) clay loam variegated with yellowish brown (10YR 5/6) and light olive brown (2.5Y 5/6) with common large and prominent light brownish gray (10YR 6/2) mottles; very weak medium blocky structure; friable; the light brownish gray (10YR 6/2) areas occur in prominent large faces which may be the surfaces of large prisms; a few small roots follow these surfaces; less chert than in the overlying horizon.

Remarks: Clay flow surfaces are best expressed in the R22 horizon; they are weaker in the overlying and underlying horizons. Pan development, as indicated by brittleness, starts in the R22 horizon. The upper part of the profile is probably younger colluvial material over the underlying Fullerton-like material, as suggested by the chert fragments. Streaks from the R22 horizon penetrate the entire pan and merge with the gleayed faces of the B3 and C horizons; their color changes from brown in the upper part of the fragipan to gray in the B3 and C horizons.

SOIL Lawrence silt loam, level phase SOIL Nos. 555Tenn-16-31 LOCATION Coffee County, TennesseeSOIL SURVEY LABORATORY Beltsville, MarylandLAB. Nos. 56300 - 56307

Depth (in.)	Horizon	Size class and particle diameter (mm) 3A1											3B2 Cm	Coarse fragments 3B1			
		Total			Sand			Silt			Int. III		Int. II		2A2 ≥ 2 Pct.	2 - 19 Pct. of ≤ 76nm	19 - 76 Pct.
		Sand (2-0.05) (0.05- 0.002)	Silt (< 0.002)	Clay (2-1)	Very coarse >(1-0.5)	Coarse (0.5-0.25)	Medium (0.25-0.1)	Fine (0.1-0.05)	Very fine (0.05-0.02)	Int. III (0.02- 0.002)	Int. II (0.2-0.02)	(2-0.1)					
Pct. of ≤ 2 mm																	
0-1	A1	75.5	10.0	0.2	0.7	1.0	6.4	6.2	51.2	34.7					tr.		
1-7	A2	72.9	16.0	0.1	0.3	0.8	4.8	5.1	51.5	29.8					-		
7-15	B1	67.6	22.2	0.2	0.3	0.8	4.1	4.8	49.0	26.2					-		
15-24	B2	71.0	18.6	0.1	0.5	1.0	4.1	4.7	50.9	27.5					1		
24-35	B3m1	70.3	17.9	0.2	0.5	1.2	4.6	5.3	50.6	28.1					tr.		
35-47	B3m2	65.0	25.0	0.1	0.5	0.9	3.8	4.7	46.9	25.2							
47-59	Cm1	59.6	27.9	0.5	0.7	1.2	4.7	5.4	42.3	26.0					tr.		
59-71*	Cm2	45.7	27.1	2.6	2.8	3.5	10.1	8.2	33.4	26.7					2		
Depth (in.)	GAla Organic carbon	Nitrogen	C/N	Carbonate as CaCO <sub>3</sub> Pct.	Ext. iron as Fe2O3 Pct.	Bulk density			4D1 COLE	Water content			4C1 WRD in/in	pH			
	Pct.	Pct.				4A1a 1/4 bar	4A1b Oven dry			4B1c 1/4 bar	4B2 15 bar			8C1c (1:1)	8C1a (1:1)		
						g/cc	g/cc			Pct.	Pct.	Pct.		KCl	H <sub>2</sub> O		
0-1	2.00	0.070	30			0.6										4.2	
1-7	0.50	0.090	6			0.6									4.4		
7-15	0.23	0.044				0.9									4.3		
15-24	0.14	0.032				1.3									4.4		
24-35	0.10	0.025				1.0									4.5		
35-47	0.06	0.021				1.9									4.6		
47-59	0.06	0.021				1.4									4.4		
59-71*	0.02	0.016				0.7									4.4		
Depth (in.)	Extractable bases 5B1a					6Ch1a Ext. acidity	CEC		6C1d Ext. Al	Ratios to clay			8D3 Ca/Mg	Base saturation			
	6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum		5A3a Sum cations			CEC Sum	Ext. iron	15-ber water	5C1 Sum cation Pct.	8C1 NH <sub>4</sub> OAc Pct.			
0-1	0.2	0.4	tr.	0.2		8.3	9.1								9		
1-7	0.2	0.3	tr.	0.1		7.1	7.7								8		
7-15	tr.	0.2	tr.	0.1		9.1	9.4								3		
15-24	0.2	0.2	tr.	0.1		7.5	8.0								6		
24-35	0.2	0.2	0.1	0.1		7.1	7.7								8		
35-47	tr.	0.2	0.1	0.1		9.3	9.9								6		
47-59	0.1	0.7	tr.	0.1		10.4	11.3								8		
59-71*	0.1	0.4	0.1	0.1		8.5	9.2								8		
Depth (in.)	Clay Fraction Analysis 7Alb-d																
	Mt.	Chi.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite									
									7A2 X-ray								
									7A3								

Mt. = Montmorillonite, Chi. = chlorite, Vm. = Vermiculite, Mi. = mica,  
Int. = interstratified layer, Qtz. = quartz, Kl. = kaoliniteRelative amounts: blank = not determined, dash = not detected,  
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

\* Mainly fossiliferous material.

Soil Type: Lawrence silt loam, level phase.

Soil No.: S55Tenn-16-31

Location: Coffee County, Tennessee. 3.0 miles south of U. S. Highway 41 at the Fifth Wheel Restaurant on Hill's Chapel Road. 320 feet south of abandoned field and 60 feet west of road. Aerial photo 50-182.

Vegetation and land use: Forest consisting chiefly of white, willow, post, and red oaks.

Slope and land form: One percent.

Sampled by and date: T. R. Love and W. H. Proffitt, November 21 and 22, 1955.

Horizon and

Beltsville

Lab. No.

A1 56300	0 to 1 inch. Grayish brown (2.5Y 5/2) with many dark gray (10YR 4/1) stains; very friable silt loam; weak fine granular structure; contains many small roots of which an estimated 10 percent of the total volume were discarded from sample.
A2 56301	1 to 7 inches. Light yellowish brown (2.5Y 6/4) to pale brown (10YR 6/3) with common fine faint yellowish brown (10YR 5/6) mottles; very friable silt loam; weak fine granular and subangular blocky structure; contains many fine roots.
B1 56302	7 to 15 inches. Pale brown (10YR 6/3) to light yellowish brown (2.5Y 6/4) with common fine faint yellowish brown and light brownish gray (10YR 6/2 mottles; friable silt loam; weak fine subangular blocky structure; common small roots present.
B2 56303	15 to 24 inches. Many fine faint mottles of light yellowish brown (2.5Y 6/4 - 10YR 6/4) light brownish gray (2.5Y 6/2) and yellowish brown (10YR 5/6); friable silt loam; weak to moderate fine angular blocky structure; a few clay skins on pedes; contains a few small roots.
B3m1 56304	24 to 35 inches. Many fine distinct mottles of light brownish gray, light yellowish brown (2.5Y 6/2 - 6/4), and yellowish brown (10YR 5/6) moderately compact in place, but crushes to a friable light silty clay loam or heavy silt loam; contains an occasional fine prominent red (2.5YR 4/6) mottle in lower part; weak to moderate fine angular blocky structure; contains a few clay skins and silt coatings; common pinholes and a few fine roots present.
B3m2 56305	35 to 47 inches. Many medium prominent mottles of gray yellowish brown (10YR 6/1 - 5/6), light brownish gray (2.5Y 6/2), and strong brown (7.5YR 5/6) compact firm silty clay loam which breaks to weak or moderate fine and medium angular blocky structure; contains a few distinct discontinuous clay skins; occasional fine roots and pinholes present.
Cm1 56306	47 to 59 inches. Many coarse prominent mottles of gray, yellowish brown (10YR 6/1 - 5/6), light brownish gray (2.5Y 6/2) and red (2.5YR 4/6) firm silty clay loam; weak medium angular to massive structure; contains a very few discontinuous clay skins; occasional fine root and pinholes present.
Cm2 56307	59 to 71 inches. Many coarse prominent mottles of gray, light yellowish brown, yellowish brown, (10YR 6/1 - 6/4 - 5/6) and red (2.5YR 4/6) firm silty clay loam; without well defined structure; common angular chart fragments 1/4 to 3 inches in diameter and a few pinholes present. Larger chart fragments comprising 2 percent of the total volume discarded from sample.

Notes: Color of soil moist unless otherwise stated.

SOIL Lawrence silt loam, level phase SOIL Nos. 555Tenn-16-32 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 56308 - 56315

Depth (in.)	Horizon	181b Size class and particle diameter (mm) 3A1												3B2 Cm	Coarse fragments 3B1					
		Total			Sand			Silt			Int. III (0.05-0.02 (0.02- 0.002))		Int. II (0.02- (0.02- 0.002))		- (-2-0.1)		2A2 Cm Pct.		2-19 Pct. of < 76mm	
		Sand (2-0.05 (0.05- 0.002))	Silt (< 0.002)	Clay (2-1)	Very coarse (1-0.5)	Coarse (0.5-0.25)	Medium (0.25-0.1)	Fine (0.1-0.05)	Very fine (0.05-0.02 (0.02- 0.002))											
0-2	A1	69.1	9.8	0.2	0.5	0.7	8.2	11.5		43.7	43.2					-				
2-10	A2	67.9	14.5	0.2	0.3	0.5	6.6	10.0		43.7	39.3					tr.				
10-15	B1	67.1	15.9	0.1	0.3	0.5	6.2	9.9		44.6	37.3					-				
15-23	B2	62.8	23.0	0.1	0.2	0.4	5.2	8.3		41.0	34.3					-				
23-37	B3ml	66.5	17.9	0.1	0.2	0.4	5.4	9.5		45.1	35.2					-				
37-51	B3m2	63.9	23.6	-	0.2	0.4	4.2	7.7		43.9	31.1					-				
51-69	B2b	45.8	35.4	0.1	0.5	0.9	6.3	11.0		28.5	33.1					tr.				
69-81	B3b	43.1	37.3	1.6	1.5	0.9	5.8	9.8		27.1	30.2					1				
Depth (in.)	GAI Organic carbon	Nitrogen Pct.	C/N	Carbonate as CaCO <sub>3</sub> Pct.	Ext. iron as Fe2O3 Pct.	Bulk density			4D1 COLE	Water content			4C1 WRD in/in	pH						
						g/cc	g/cc	g/cc		4A1c 1/2 bar	4A1h Oven dry			8Clc (1:1)	8Clc (1:1)					
						Pct.	Pct.	Pct.		Pct.	Pct.	Pct.		KCl	H <sub>2</sub> O					
0-2	2.18	0.095	23			0.7										4.2				
2-10	0.42	0.034				0.9										4.3				
10-15	0.20	0.027				1.0										4.4				
15-23	0.09	0.019				1.0										4.6				
23-37	0.09	0.016				2.1										4.4				
37-51	0.12	0.020				2.7										4.4				
51-69	0.06	0.022				7.5										4.5				
69-81a	0.06	0.026				4.7										4.6				
Depth (in.)	Extractable bases 5B1a					6C1a	CEC		6G1d Ext. Al	Ratio to clay			8D3 Ca/Mg	Base saturation						
	6M2d	602b	6P2a	6Q2a	Sum	Ext. acidity	6M2d Sum cation			CEC Sum	Ext. iron	15-bar water		8C3 Sum cation Pct.	8C1 NH <sub>4</sub> OAc Pct.					
	Ce	Mg	Na	K																
0-2	tr.	0.1	0.1	0.1		10.3	10.6									3				
2-10	0.1	0.2	tr.	tr.		6.8	7.1									4				
10-15	0.1	0.2	0.1	tr.		6.9	7.3									5				
15-23	0.2	0.2	0.1	0.1		7.9	8.4									6				
23-37	0.1	0.2	0.1	tr.		7.3	7.7									5				
37-51	0.2	0.2	0.1	tr.		9.1	9.6									5				
51-69	0.1	0.1	0.1	tr.		11.1	11.4									3				
69-81a	0.1	0.1	0.2	tr.		11.5	11.9									3				
Depth (in.)	Clay Fraction Analysis 7A1b-d												Mt. Chl. Vn. Ml. Int. Qtz. Kl. Gibbsite							
	Mt.	Cm.	Vn.	Ml.	Int.	Qtz.	Kl.	Gibbsite												
	7A2 X-ray								7A3											

Mt. = Montmorillonite, Chl. = chlorite, Vn. = vermiculite, Ml. = mica,  
Int. = interstratified layer, Qtz. = quartz, Kl. = kaoliniteRelative amounts: blank = not determined, dash = not detected,  
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

a. Mainly fossiliferous material.

Soil Type: Lawrence silt loam, level phase.

Soil No.: 559Tenn-16-32

Location: Coffee County, Tennessee. 9.5 miles north of Manchester on Highway 53 to an old logging road in woods on west side of highway. Logging road is exactly 1.25 miles south of David Grocery. 140 feet west of highway at old logging road and 250 feet north of abandon field. Aerial photo 6G-39.

sweet gum and sourwood undergrowth.  
Slope and land form: One percent.

Horizon and  
Beltsville  
Lab. No.

O1, O2 1 to 0 inches. Forest litter and leaf mold.  
Not Sampled

A1 56308	0 to 2 inches. Grayish brown to dark grayish brown (2.5Y 5/2 - 4/2) very friable silt loam; weak fine granular structure; contains a few gray and pale brown (10YR 5/1 and 6/3) stains; many fine roots of which an estimated 10 percent of the total volume was discarded from sample.
A2 56309	2 to 10 inches. Light yellowish brown (2.5Y 6/4) to pale brown (10YR 6/3) very friable silt loam; weak fine subangular blocky and granular structure; contains a few fine faint yellowish brown (10YR 5/6) and light brownish gray (2.5Y 6/2) mottles; many small roots present.
B1 56310	10 to 15 inches. Light olive brown to light yellowish brown (2.5Y 5/4 - 6/4) with common fine faint light brownish gray (2.5Y 6/2) and yellowish brown (10YR 5/6) mottles; friable silt loam; weak fine angular blocky structure; contains common pinholes, wormholes, and small roots.
B2 56311	15 to 23 inches. Many fine faint to distinct mottles of light olive brown (2.5Y 5/4), gray, and yellowish brown (10YR 6/1 - 5/6) friable heavy silt loam to light silty clay loam; weak to moderate fine angular blocky structure; contains few to common pinholes and a few small roots; abrupt irregular lower boundary with a few pockets or tongues extending to depths of 36 to 46 inches.
B3a1 56312	23 to 27 inches. Many fine distinct mottles of light yellowish brown, gray, and yellowish brown (10YR 6/4 - 5/1 - 6/1 - 5/6); compact in place but breaks or crushes to a brittle friable silt loam; weak to moderate fine and medium platy structure with reddish brown to yellowish red (5YR 4/4 - 4/6) and light olive brown (2.5Y 5/4) coatings; contains many pinholes and an occasional wormholes; discontinuous upper and lower boundaries.
B3a2 56313	37 to 51 inches. Many medium prominent mottles of gray, yellowish brown (10YR 5/1 - 6/1 - 5/6), light yellowish brown (2.5Y 6/4) and reddish brown to yellowish red (5YR 4/4 - 4/6) firm silty clay loam; moderate medium to coarse platy structure; common distinct clay skins on horizontal faces; few to common pinholes; discontinuous upper boundary broken with occasional tongues from horizons above.
B2b 56314	51 to 69 inches. Many medium prominent mottles of red (2.5YR 4/8) yellowish brown, gray (10YR 5/6 - 5/1 - 6/1), and strong brown (7.5YR 5/6); firm to very firm silty clay; moderate to strong medium angular blocky structure; common distinct clay skins on peda.
B3b 56315	69 to 81 inches. Red (2.5YR 4/8) with many medium and fine prominent gray, yellowish brown (10YR 6/1 - 5/6), reddish yellow, strong brown (7.5YR 6/8 - 5/6), and yellowish red (5YR 4/6) mottles; very firm silty clay or clay; moderate to strong medium angular blocky structure; common distinct clay skins on peda; contains a few angular chert fragments 1/4 to 2 inches in diameter.

SOIL Leadvale silt loam

SOIL Nos. 853 Penn-5-11 LOCATION Blount County, Tennessee

**SOIL SURVEY LABORATORY** Beltsville, Maryland

LAB. NOS. 53735-53738

Soil Type: Leadvale silt loam

Soil No.: 853Temp-5-11

Location: Blount County, Tennessee. 1/2 mile east of Rocky Branch School.

Vegetation and land use: Idle - may be mowed for hay. Lespedeza and weeds.

Horizon and  
Beltsville  
Lab. No.

Ap 0 to 6 inches. Brownish yellow (10YR 6/6) friable silt loam to loam.  
53735

B1 6 to 16 inches. Brownish yellow (10YR 6/8), and a few faint pale yellow and strong brown  
53736 mottles, moderately friable clay loam or silty clay loam. Moderate medium blocky structure.

B2 16 to 32 inches. Brownish yellow (10YR 6/8) firm silty clay loam. Some distinct strong brown  
53737 (7.5YR 5/8) mottles. Moderate medium blocky structure.

\* C 32 to 50 inches. Mottled pale yellow and very pale brown firm silty clay loam. Moderate

soil Leadvale silt loam

SDIL No. 853 Penn-5-24

LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland

LAB. Nos. 53781-53783

Soil Type: Leadvale silt loam

Soil No.: S53Tenn-5-24

Location: Blount County, Tennessee. 2 miles southeast of Prospect.  
Vegetation and land use: Hay or pasture. Lespedeza and weeds.

Horizon and  
Beltsville  
Lab. No.

Ap 53781 0 to 5 inches. Pale brown (10YR 6/3) friable silt loam.

B2 53782 5 to 16 inches. Brownish yellow (10YR 6/6) moderately friable to firm silty clay loam.

C(pan) 53783 16 to 48 inches. Brownish yellow (10YR 6/6) firm silty clay loam; numerous distinct grayish brown and pale yellow mottles.

**SOIL SURVEY LABORATORY** Lincoln, Nabr. November 1958

**SOIL TYPE** Lexington silt loam      **LOCATION** Henderson County, Tennessee

**SOIL NOS.** S55Tenn-39-3 **LAB. NOS.** 7725-7731

Soil type: Lexington silt loam      Described by E. C. Sease and Robbie Flowers  
 Soil Nos.: 855Tenn-39-3

Date: April 5, 1955

Area: Henderson County, Tennessee

Location: About 4 miles east of Lexington, Tennessee, (see Photo No. 2F-10)  
 on Dr. John Douglass farm. 200 yards east of Timberlake station, about  
 300 feet south of farmhouse in pasture.

Present land use: Fescue and ladino pasture.

Sampling party: E. C. Sease and Robbie Flowers.

Lincoln

Lab.

No. Horizon Depth

7725 A<sub>p</sub> 0-5 inches Dark brown (10YR 4/3) very friable silt loam; weak fine crumb structure; abrupt boundary.

7726 B<sub>21</sub> 5-9 inches Reddish brown (5YR 4/3) with shades on ped faces of reddish brown (5YR 4/4); friable heavy silt loam; moderate medium subangular blocky structure; some dark brown organic stain on structure faces; gradual boundary.

7727 B<sub>22</sub> 9-13 inches Reddish brown (5YR 4/4) to dark brown (7.5YR 4/4) friable heavy silt loam; moderate medium subangular blocky structure which breaks to fine crumb structure under pressure; dark brown stain on structure faces; gradual boundary.

7728 B<sub>23</sub> 13-20 inches Reddish brown (5YR 4/4) to dark brown (7.5YR 4/4) friable silt loam; weak medium subangular blocky structure; dark brown stains on surface faces; gradual boundary.

7729 C<sub>1</sub> 20-30 inches Reddish brown (5YR 4/4) friable silt loam with a little grit or sand; massive, breaks under pressure to medium subangular blocks; dark brown stain on some of the ped surfaces; gradual boundary.

7730 C<sub>2</sub> 30-42 inches Dark reddish brown (5YR 3/4) very friable silt loam with streaks of pale brown (10YR 6/3) sandy material; massive; medium dark brown stains on some ped faces; gradual boundary.

7731 D<sub>1</sub> 42 plus inches Dark red (2.5YR 3/6) with streaks of pinkish gray (7.5YR 6/2); friable sandy clay loam; massive.

Note: More friable and sandy at 60 inches and below.

Remarks: Colors given are for moist soil unless otherwise stated. This is the eroded gently sloping phase of Lexington.

**SOIL SURVEY LABORATORY** Lincoln, Nebr. November 1958

**SOIL TYPE** Lexington **LOCATION** Henderson County, Tennessee  
silt loam

**SOIL NOS.** S55Tenn-39-4 **LAB. NOS.** 7732-7739

Soil type: Lexington silt loam Described by E. C. Sease and Robbie Flowers

Soil Nos.: S55Tenn-39-4

Date: April 6, 1955

Area: Henderson County, Tennessee

Location: On gravel road running south from the Lexington-Natchez Trace Road at Duncan Roberts farm; 300 yards from intersection of the two roads and 25 feet east of the gravel road (see Photo No. 2F-50).

Present land use: Cultivated crop (cowpeas) in 1954, idle in 1955.

Sampling party: E. C. Sease and Robbie Flowers.

Lincoln

Lab.

No. Horizon Depth

7732	A <sub>p</sub>	0-6 inches	Dark brown (10YR 4/3) very friable silt loam; weak fine crumb structure; abrupt boundary.
7733	B <sub>21</sub>	6-10 inches	Dark brown (7.5YR 4/4) stained with dark brown (10YR 4/3) organic matter on some ped faces; friable silt loam; moderate medium subangular blocky structure; gradual boundary.
7734	B <sub>22</sub>	10-15 inches	Reddish brown (5YR 4/4) to yellowish red (5YR 4/6) friable silt loam; moderate medium subangular blocky structure; gradual boundary.
7735	B <sub>23</sub>	15-22 inches	Reddish brown (5YR 4/4) friable silt loam; weak medium subangular blocky structure; gradual boundary.
7736	C <sub>1</sub>	22-34 inches	Dark brown (7.5YR 4/4) and dark yellowish brown (10YR 4/4) very friable silt loam with some sand; very weak medium subangular blocky structure; gradual boundary.
7737	D <sub>1</sub>	34-46 inches	Dark yellowish brown (10YR 4/4) with streaks of light yellowish brown (10YR 6/4); very friable sandy clay loam; massive; some dark brown stains; gradual boundary.
7738	D <sub>2</sub>	46-52 inches	Reddish brown (5YR 4/4) with streaks of light brown (7.5YR 6/4), compact sandy loam; massive in place but breaks to single grain under pressure; gradual boundary.
7739	D <sub>3</sub>	52 plus inches	Yellowish red (5YR 4/8) very friable sandy loam; massive in place but breaks to single grain under pressure.

Note: Grades to yellowish red (5YR 4/8) loose sand at 72 inches.

Remarks: Colors given are for moist soil unless otherwise stated. This is the eroded gently sloping phase of Lexington.

SOIL SURVEY LABORATORY  
Lincoln, Nebraska

LOCATION Putnam County, Tennessee

SOIL TYPE Linker loam

LAB NOS. 12559 - 12564

SOIL NOS. S59Tenn-71-24

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1B1a		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)				3A1		2A2	TEXTURAL CLASS
			VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY	INTERNATIONAL		
			2.1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.01	0.01-0.002	II	III	> 2

Soil type: Linker loam

Soil Nos.: 859Tenn-71-24

Location: Putnam County, Tennessee, TN-SCD-6: Sand Springs, 200 yards southeast of Highway 70N; 250 feet southwest of private road; Salby farm. Photo AEW-2N-9.

Vegetation and Use: Mainly white oak and chestnut oak forest. Good trees. Virgin site, although slightly eroded. Smilax and Vaccinium understory.

Slope and Land Form: Five percent slope; narrow upland ridge top.

Drainage and Permeability: Well drained; surface runoff moderate; internal drainage moderate to moderately rapid. Moderate permeability.

Parent Material: Acid sandstone of Cumberland Plateau.

Samples Collected by: Edwood Pederson, G. T. Jackson, J. A. Elder, M. E. Springer, J. Fleming, D. K. Springer, T. J. Longwell, S. R. Bacon, B. C. Cox, December 2, 1959.

Profile Described by: G. T. Jackson, December 2, 1959.

Horizon and  
Lincoln  
Lab. No. Depth

Aoo       $\frac{1}{2}$  to  $\frac{1}{4}$       Loose, undecomposed broadleaf litter, principally oak.  
Not      inch

Not       $\frac{1}{2}$  to 0      Partly decomposed broadleaf litter and twigs.  
sampled      inch

A1      Not measurable.  
Not      sampled

A2      0 to 5      Dark yellowish brown (10YR4/4) loam with weak fine granular  
12559      inches      structure; very friable; clear wavy boundary.

B1      5 to 10      Strong brown (7.5YR5/6) to brown (7.5YR4/4) clay loam with weak  
12560      inches      fine subangular blocky structure; friable; clear wavy boundary.

B2      10 to 15      Yellowish red (5YR4/6) clay loam with weak fine subangular  
12561      inches      blocky structure; friable; clear wavy boundary.

B2      15 to 20      Red (2.5YR4/6) clay loam with streaks and pockets of dark  
12562      inches      brown (7.5YR4/4); weak medium subangular blocky structure;  
                          friable; gradual wavy boundary.

B2      20 to 34      Red (2.5YR4/6) clay loam with weak medium angular blocky  
12563      inches      structure; patchy discontinuous clay films; friable; gradual  
                          wavy boundary.

B3      34 to 48      Red (2.5YR4/6) sandy clay loam; massive; friable, firm in  
12564      inches      place; few rounded white pebbles; gradual, wavy boundary.

Du(?)      48 to 58      Red (2.5YR5/6) pebbly sandy loam with few dark red (2.5YR3/6)  
Not      inches      streaks; firm in place but friable.  
sampled      plus

Remarks: Colors and consistency are for moist soil. Understory vegetation of Smilax and Vaccinium may indicate a low base status.

**SOIL SURVEY LABORATORY**  
Lincoln, Nebraska

LOCATION Putnam County, Tennessee

SOIL TYPE Linker loam

LAB NOS. 12565 - 12572

SOIL NOS. S59Tenn-71-25

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1Bla						PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)			3A1			TEXTURAL CLASS	
			VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY <0.002	II 0.2-0.02	III 0.02-0.002	2A2 > 2 (<1.9mm)				
12565	2-0	A0														
12566	0-5	A2	1.0	5.7	13.4	20.3	4.2	30.9	24.5	19.7	22.3	Tr.	1			
12567	5-10	B1	0.8	6.0	13.1	18.1	3.6	28.3	30.1	17.5	20.4	Tr.	c1			
12568	10-15	B21	1.4	6.7	12.8	17.0	3.2	25.5	33.4	15.8	18.4	Tr.	c1			
12569	15-25	B22	0.6	6.1	13.0	18.8	3.3	19.4	38.8	15.5	13.2	Tr.	c1			
12570	25-43	B23	1.6	9.0	17.6	24.2	3.2	14.5	29.9	14.6	10.5	Tr.	scl			
12571	43-58	B31	2.6	11.4	22.3	30.0	3.5	11.0	19.2	15.3	8.0	Tr.	fsl/s1			
12572	58-69	B32	3.2	14.6	22.4	26.1	3.3	7.4	23.0	13.8	5.4	8	scl			
		pH													4B2	
		8C1a $H_2O$ 1:1													15-Bar Water %	
			6A1a ORGANIC CARBON %	6B1a NITROGEN %		C/N		6C1a Free Iron as $Fe_2O_3$ %								
									Field 4B4	State 4Ala	30-Cm. 4B3	0.D. 4Alc	4Alh			
									Water %	Water g/cc	Water %	g/cc	g/cc			
12565	3.8															
12566	4.6			1.15	0.059	20	2.3	21.6	1.45	17.1	1.48	1.53	9.9			
12567	4.8			0.79	0.057	14	2.8	22.2	1.42	19.4	1.45	1.51	11.8			
12568	4.9			0.60	0.039	15	3.3	25.7	1.37	22.0	1.40	1.45	13.0			
12569	4.9			0.40	0.031	13	3.8	25.9	1.40	21.9	1.43	1.46	14.3			
12570	5.0			0.09			3.3	19.0	1.65	18.1	1.67	1.68	11.7			
12571	4.8			0.07			2.3	17.5	1.67	15.6	1.70	1.71	8.2			
12572	5.0			0.06			2.5						8.7			
		5A1a CATION EXCHANGE CAPACITY $NH_4OAc$	EXTRACTABLE CATIONS 5Bla						5C1 Base Sat.% on Sum Cations	5C1 Base Sat.% $NH_4OAc$	5Bla Sum Ext. Bases me/100g	5A3a Sum Ext. Bases me/100g				
			6N2b	6O2b	6P2a	6Q2a	6H1a									
			Ca	Mg	Na	K	H									
			milliequivalents per 100g soil													
12565							90.0									
12566	8.6	0.2	0.2	<0.1	0.1	12.6	4	6	0.5	13.1						
12567	9.0	0.1	0.5	<0.1	0.2	12.4	6	9	0.8	13.2						
12568	9.6	0.2	0.7	0.1	0.2	14.3	8	12	1.2	15.5						
12569	9.6	0.1	0.7	0.1	0.2	13.5	8	11	1.1	14.6						
12570	6.7	0.1	0.2	<0.1	0.1	10.0	4	6	0.4	10.4						
12571	4.5	0.1	0.1	0.1	0.1	6.8	6	9	0.4	7.2						
12572	4.2	<0.1	0.1	<0.1	0.1	6.8	3	5	0.2	7.0						

Soil type: Linker loam

Soil Nos. : 859Tann-71-25

Location: Putnam County, Tennessee, TN-SCD-6. Two miles west of intersection of U. S. Highway 70N and State Highway 61; 200 feet north of 70N and 100 feet west of abandoned house. Hargrove property. Photo AEN-2N-69.

Vegetation and Use: White oak, Chestnut oak and Scarlet oak forest.

Slope and Land Form: Four percent slope; narrow upland ridge top.

Drainage and Permeability: Well drained, surface runoff moderate; internal drainage moderate to moderately rapid; moderate permeability.

Parent Material: Acid sandstones of Cumberland Plateau.

Samples Collected by: Edwood Pederson, G. T. Jackson, J. Fleming, December 2, 1959.

Profile Described by: G. T. Jackson, December 2, 1959.

Horizon and

Lincoln

Lab. No. Depth

Aco 2 $\frac{1}{2}$  to 2      Loose undecomposed leaf litter, principally oak.  
Not    inches  
sampled

An    2 to 0      Partially decomposed leaf litter and twigs. Weakly laminated; no

A1                      Not measurable. Varies from none to minor fractions of an inch.  
Not  
sampled

A2    0 to 5      Dark brown (10YR4/3) loam with streaks of yellowish brown  
12566    inches      (10YR5/4); weak fine granular structure; very friable; clear  
wavy boundary.

B1    5 to 10      Yellowish red (5YR4/6) loam with common medium faint  
12567    inches      variegations of red (2.5YR4/6); weak fine subangular blocky  
structure; very friable; porous; clear wavy boundary.

B21    10 to 15      Yellowish red (5YR4/6) clay loam with common medium faint  
12568    inches      variegations of red (2.5YR4/6); weak fine subangular blocky  
structure; very friable; porous; gradual smooth boundary.

B22    15 to 25      Red (2.5YR4/8) clay loam with moderate medium subangular blocky  
12569    inches      structure; thin patchy clay films; friable; gradual smooth  
boundary.

B23    25 to 43      Red (2.5YR4/8) sandy clay loam; massive; firm; diffuse wavy  
12570    inches      boundary.

- B31    43 to 58      Red (2.5YR4/6) sandy loam with a massive structure; friable to  
12571    inches      firm; diffuse wavy boundary.

**SOIL SURVEY LABORATORY**  
Lincoln, Nebraska

LOCATION Putnam County, Tennessee

SOIL TYPE Mimosa silt loam

LAB NOS. 13542 - 13546

SOIL NOS. S60-Tenn-71-34

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1R1a		PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)						3A1			TEXTURAL CLASS	
			VERY COARSE SAND 2-1	COARSE SAND 1-0.5	FINE SAND 0.5-0.25	VERY FINE SAND 0.25-0.10	SILT 0.10-0.05	CLAY 0.05-0.002	INTERNATIONAL		2A2				
			II	III	> 2 mm										
13542	0-9	Ap	3.4a	2.6a	1.2a	1.4	2.3	61.6	27.5	22.9	41.6	9	saci/sil		
13543	9-18	B21	1.5	1.2a	0.5a	0.8b	1.0b	34.2	60.8	10.2	25.4	Tr.	c		
13544	18-24	B22	0.8	0.8a	0.5a	1.0b	1.1b	34.4	61.4	10.6	25.4	Tr.	c		
13545	24-27	B3	0.6	1.2a	0.8b	1.7b	1.7b	35.7	58.3	9.2	29.1	Tr.	c		
13546	27-41	C	1.0a	1.1b	0.5b	0.9b	1.2b	36.1	59.2	9.3	28.5	Tr.	c		
pH			ORGANIC MATTER			6C1a Free Iron as Fe <sub>2</sub> O <sub>3</sub> %		BUCK DENSITY						4B2	
8C1a H <sub>2</sub> O 1:1			6A1a ORGANIC CARBON %		6B1a NITROGEN %		C/N		Field	State	30-Ca.	O.D.			
									4B4	4Ala	4B3	4Alc	4Alh	15-Bar Water %	
									Water	Water	Water				
13542	5.6		1.39	0.146	10	3.8	22.7	1.47	26.8	1.43	1.54	12.4			
13543	5.5		0.33	0.075	4	6.1	30.6	1.40	30.6	1.40	1.73	23.2			
13544	5.1		0.22	0.066		6.1	29.6	1.44	30.3	1.42	1.75	24.2			
13545	5.5		0.20			5.6	27.8	1.46	28.0	1.46	1.79	23.0			
13546	6.9		0.17			5.3	26.3	1.52	26.9	1.50	1.86	21.8			
5A1a CATION EXCHANGE CAPACITY NH <sub>4</sub> -OAc			EXTRACTABLE CATIONS 5X1a 6N2D 6O2b 6P2a 6Q2a 6H1a				5C3 Base Sat.% in Sum Cations		5C1 Base Sat.% in Sum NH <sub>4</sub> -OAc		5B1a Sum Ext. Bases me/100g		5A3a Sum Ext. Cations 100g		8D3 Ca/Mg
13542	14.0	10.6	0.8	<0.1	0.2	8.7	57	83	11.6	20.3					
13543	24.2	19.3	1.0	0.1	0.2	11.9	63	85	20.6	32.5	19.3				
13544	27.2	21.0	1.4	0.1	0.2	14.8	60	83	22.7	37.5	15.0				
13545	28.7	24.5	1.4	0.1	0.2	11.2	70	91	26.2	37.4	17.5				
13546	29.3	31.2	1.3	0.1	0.2	4.6	88	112	32.8	37.4	24.0				

- a. Few Fe-Mn? concr., and ferruginous sandstone fragments.
- b. Common Fe-Mn? concr., and ferruginous sandstone fragments.
- c. Range is 0.12 to 0.16 g/cc.

Soil type: Mimosa silt loam  
 Soil No.: 360Tenn-71-34  
 Location: Putnam County, Tennessee, TN-SCD-6; 1.1 miles southwest  
           of Gentry off U. S. Highway 70N. Photo AEW-5N-26.  
 Vegetation and Use: Previously in pasture, now in corn.  
 Slope and Land Form: Eroded 12 percent slope; upland.  
 Drainage and Permeability: Well drained; surface runoff rapid; permeability slow to  
                           very slow.  
 Parent Material: Phosphatic limestone.  
 Samples Collected by: George T. Jackson, S. R. Bacon, B. C. Cox.  
 Profile Described by: George T. Jackson  
 Horizon and  
 Lincoln  
 Lab. No. Depth  
 Ap        0 to 9  
 13542     inches      Brown (10YR4/3) silt loam with weak medium and fine  
                   granular structure; friable; few stems of undecomposed  
                   plant residue; few chert fragments; medium acid; clear  
                   smooth boundary.  
 B21       9 to 18      Variegated yellowish brown (10YR5/6) and (10YR5/8) silty  
 13543     inches      clay loam; variegations are common and medium; moderate  
                   medium angular and subangular blocky structure; common  
                   clay films; firm; thin channels of the Ap extend into  
                   this horizon; very strongly acid; gradual wavy boundary.  
 B22       18 to 24      Yellowish brown (10YR5/8) clay with common medium distinct  
 13544     inches      variegations of strong brown (7.5YR5/6) and pale brown  
                   (10YR6/3); moderate medium and fine angular blocky  
                   structure; thick continuous clay films; firm; very  
                   strongly acid; gradual wavy boundary.  
 B3        24 to 27      Variegated strong brown (7.5YR5/8) and pale brown

SOIL SURVEY LABORATORY  
Lincoln, Nebraska

LOCATION Putnam County, Tennessee

SOIL TYPE Mimosa silt loam

LAB NOS. 13547 - 13551

SOIL NOS. S60-Tenn-71-35

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1Bla		PARTICLE SIZE DISTRIBUTION (in mm.)				(per cent) 3A1			TEXTURAL CLASS		
			VERY COARSE SAND 2.1	COARSE SAND 1.05	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY <0.002	II 0.2-0.02	III 0.02-0.002 (<2 mm)			
13547	0-7	Ap	5.8a	3.1a	1.3a	1.7	2.5	61.2	24.4	22.1	42.4	12	sil	
13548	7-15	B21	0.4b	0.5b	0.4b	1.0b	2.2b	37.1	58.4	12.3	27.6	Tr.	c	
13549	15-24	B22	0.4b	0.8b	0.6b	1.4b	2.4b	36.2	58.2	13.1	26.2	Tr.	c	
13550	24-28	B3	1.4a	1.5a	0.8a	1.4	2.2	39.5	53.2	13.1	29.3	Tr.	c	
13551	28-42	C	2.4a	1.8a	0.8	1.2	1.8	42.3	49.7	12.6	32.1	12	sic	
		pH	ORGANIC MATTER				6C1a Free H <sub>2</sub> O 1:1	5C1a Iron Fe <sub>2</sub> O <sub>3</sub>	BULK DENSITY Water 50-cm. O.D.				4B2	
			6A1a H <sub>2</sub> O 1:1	6B1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Water	4B4 4Ala Water g/cc	4B3 4Alc Water g/cc	4B3 4Alc Water g/cc	4Alh 15-Bar Water g/cc			
13547	5.3			1.08	0.116	9	3.5	20.6	1.55c	23.3	1.53c	1.60c	10.9	
13548	5.5			0.33	0.077	4	7.8	23.9	1.59	28.0	1.49	1.71	23.4	
13549	5.1			0.24	0.076		8.2	23.4	1.59	28.2	1.49	1.69	23.4	
13550	5.0			0.21			6.8	26.4	1.50	28.6	1.47	1.66	21.6	
13551	4.9			0.16			5.8	20.8	1.58	25.9	1.52	1.66	19.8	
		5A1a CATION EXCHANGE CAPACITY NEq. OMC	EXTRACTABLE CATIONS 5A1a				5C3 Base Sat. % on Sum milliequivalents per 100g	5C1 Base Sat. % on Sum NH <sub>4</sub> OAc Cations	5R1a Sum Ext. NH <sub>4</sub> OAc Bases Cations me/100g	5A3a Sum Ext. NH <sub>4</sub> OAc Bases Cations me/100g				
13547	9.6	5.3	0.4	<0.1	0.3	9.2	39	62	6.0	15.2				
13548	16.1	12.6	0.8	<0.1	0.2	9.4	59	84	13.6	23.0				
13549	15.8	10.3	0.9	<0.1	0.2	11.3	50	72	11.4	22.7				
13550	14.2	8.4	0.6	<0.1	0.2	10.8	46	65	9.2	20.0				
13551	13.8	6.9	0.6	<0.1	0.2	10.8	42	56	7.7	18.5				

a. Few Fe-Mn? concr., and ferruginous sandstone fragments.

b. Common Fe-Mn? concr., and ferruginous sandstone fragments.

c. Range is 0.12 to 0.16 g/cc.

Soil type: Mimosa silt loam 183  
 Soil No.: S60Tenn-71-35  
 Location: Putnam County, Tennessee TN-SCD-6; 2.2 miles northwest of Gentry on Granville Road. About 200 yards northwest of road. Photo AEW-5N-24.  
 Vegetation and Use: Corn, 1960.  
 Slope and Land Form: Eroded 12 percent slope; upland.  
 Drainage and Permeability: Well drained; surface runoff rapid; permeability slow to very slow.  
 Parent Material: Phosphatic limestone.  
 Samples collected by: George T. Jackson, S. R. Bacon, B. C. Cox.  
 Profile Described by: George T. Jackson.  
 Horizon and Lincoln Lab. No. Depth  
 Ap 13547 0 to 7 inches Brown (10YR4/3) silt loam with moderate medium granular structure; friable; few undecomposed plant remains; few chert fragments; medium acid; clear wavy boundary.  
 B21 13548 7 to 15 inches Faintly variegated yellowish brown (10YR5/8) and strong brown (7.5YR5/8) silty clay loam with moderate to strong medium subangular blocky structure; common clay films; firm; few small chert fragments; strongly acid; gradual wavy boundary.  
 B22 13549 15 to 24 inches Variegated strong brown (7.5YR5/6), yellowish red (5YR4/6) and light brownish gray (10YR6/2) clay; variegations are common, medium, distinct; moderate to strong medium subangular blocky structure; thin common clay films; firm; very strongly acid; gradual wavy boundary.  
 B3 13550 24 to 28 inches Variegated strong brown (7.5YR5/6), yellowish red (5YR4/6), and yellowish brown (10YR5/6) silty clay loam; variegations are common, medium, distinct; moderate to strong medium angular blocky structure; common thick clay films; firm; few fine chert fragments and black concretions; very strongly acid; clear wavy boundary.  
 C 13551 28 to 42 inches Variegated strong brown (7.5YR 5/6) and yellowish brown (10YR 5/8) silty clay loam; variegations are common, medium and distinct; moderate to strong fine angular blocky structure; common thick clay films; firm to somewhat friable; few to common chert fragments and common black 1-5-mm. concretions; very strongly acid.

Remarks: Color and consistency are for moist soil.

soil Minvale silt loam

SOIL Nos. S53Tenn-5-19. LOCATION Blount County, Tennessee

**SOIL SURVEY LABORATORY** Beltsville, Maryland

LAR Nos. 53764-53767

Soil Type: Minvale silt loam

Soil No.: 853Tenn-5-19

Location: Blount County, Tennessee. 2 miles east of Wildwood.

Vegetation and land use: Idle. Weeds and some volunteer lespediza.

Horizon and  
Beltaville  
Lab. No.

Ap	0 to 7 inches. Yellowish brown (10YR 5/4) very friable silt loam.
53764	
B1	7 to 25 inches. Strong brown (7.5YR 5/8) or yellowish red (5YR 5/8) friable silty clay loam; weakly developed fine blocky structure.
53765	
B2	25 to 36 inches. Strong brown (7.5YR 5/8) friable silty clay loam; weak medium blocky structure.
53766	
C	36 to 55 inches. Strong brown (7.5YR 5/8) friable clay loam with numerous prominent brownish yellow (10YR 6/6) mottles; moderate medium blocky structure. Few black specks and stains. Occasional black concretion.
53767	

SOIL Minvale silt loam

SOIL No.: S53Tenn-5-25 LOCATION Blount County, Tennessee

**SOIL SURVEY LABORATORY** Beltsville, Maryland

LAB Nos 53784-53788

Soil Type: Minvale silt loam

Soil No.: S53Tenn-5-25

Location: Blount County, Tennessee. 1/4 mile northeast of Mt. Lebanon.

Vegetation and land use: Pasture. Lespedeza and volunteer grasses, and weeds.

Horizon and  
Beltsville  
Lab. No.

Ap 53784 0 to 5 inches. Pale brown (10YR 6/3) very friable silt loam.

A3 53785 5 to 10 inches. Yellowish brown (10YR 5/6) to strong brown (7.5YR 5/6) friable silt loam; moderately developed fine blocky structure. Gradual gradation to;

B1 53786 10 to 16 inches. Strong brown (7.5YR 5/8) friable silty clay loam; moderate medium blocky structure. Gradual gradation to;

B2 53787 16 to 34 inches. Yellowish red (5YR 5/8) moderately friable silty clay loam; moderate medium blocky structure. Gradual gradation to;

C 53788 34 to 52 inches. Yellowish red (5YR 4/8) moderately friable silty clay loam; a few distinct brownish yellow mottles; strong medium to coarse blocky structure.

SOIL SURVEY LABORATORY  
Lincoln, Nebraska

LOCATION Putnam County, Tennessee

SOIL TYPE Mononashela silt loam

LAB NOS. 12573-12581

SOIL NOS. 559 Tenn-71-26

LABORATORY NUMBER	DEPTH INCHES	HORIZON	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)						3A1			TEXTURAL CLASS		
			VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY <0.002	INTERNATIONAL	2A2			
			II	III	> 2 <19 mm									
12573	0-7	Ap	0.5a	1.4	1.1	18.2	15.4	55.8	7.6	48.3	36.5	Tr.		
12574	7-11	B1	0.3a	1.2	0.9	15.9	13.8	58.5	9.4	44.4	39.8	Tr.		
12575	11-15	B21	0.6a	1.2	0.9	15.9	13.5	56.6	11.3	43.6	38.4	Tr.		
12576	15-26	B22	0.5a	1.0	0.8	14.3	12.6	55.4	15.4	39.6	39.2	Tr.		
12577	26-31	B3ml	0.3	0.9	0.8	13.6	12.8	52.4	19.2	39.3	35.6	Tr.		
12578	31-39	B3m2	0.3	1.0	0.8	14.0	12.7	51.2	20.0	37.9	36.1	Tr.		
12579	39-48	B3m3	0.3	1.3	0.9	14.0	12.5	47.0	24.0	36.8	32.7	Tr.		
12580	48-54	Dul	0.2	1.1	0.9	14.1	12.6	48.0	23.0	38.0	32.7	Tr.		
12581	54-60	Du2	0.3a	1.5a	1.2	17.3	14.5	38.1	27.1	39.9	25.0	Tr.		
		pH												
			5A1a H <sub>2</sub> O 1:1		6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Fe <sub>2</sub> O <sub>3</sub> %	Free Iron as Water %	Field 4B4 4A1a	State 4B3 4A1c	30-Cm 4B3 4A1c	0-P 4A1b	4E2 15-Bar Water %
12573	5.0			0.91	0.057	16		0.7	20.7	1.45	22.4	1.47	1.49	3.4
12574	4.8			0.29	0.023	13		0.8	18.2	1.66b	17.3	1.67b	1.68	3.6
12575	4.8			0.20	0.023			1.0	18.4	1.66	17.6	1.67	1.68	4.2
12576	4.9			0.16	0.015			1.4	17.5	1.73	17.5	1.71	1.74	6.1
12577	4.9			0.09				1.8	19.2	1.67	18.7	1.68	1.70	7.9
12578	4.9			0.07				2.0	16.9	1.75	16.8	1.75	1.78	8.6
12579	4.9			0.07				3.3	19.6	1.65	19.4	1.65	1.68	10.7
12580	4.8			0.06				2.3						9.5
12581	4.9			0.06				4.9						13.0
		5A1a CATION EXCHANGE CAPACITY NH <sub>4</sub> OAc	EXTRACTABLE CATIONS 5B1a						5C3 Base Sat.% on Sum Iations	5Cl Base Sat.% on Sum NH <sub>4</sub> OAc Bases	5B1a Sum Ext. Bases	5A3a Sum Ext. Bases Cations me/100g		
		6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H								
		milliequivalents per 100g soil												
12573	3.8	0.4	0.2	<0.1	0.1	5.8	11	18	0.7	6.5				
12574	2.8	0.3	0.2	<0.1	0.1	3.6	14	21	0.6	4.2				
12575	3.2	0.2	0.2	<0.1	0.1	4.4	10	16	0.5	4.9				
12576	5.2	0.3	0.3	<0.1	0.1	6.3	10	13	0.7	7.0				
12577	5.8	<0.1	0.2	<0.1	0.1	7.0	4	5	0.3	7.3				
12578	6.5	<0.1	0.2	<0.1	0.1	7.3	4	5	0.3	7.6				
12579	7.6	0.1	0.4	<0.1	0.1	8.5	6	8	0.6	9.1				
12580	6.7	<0.1	0.2	0.1	0.1	8.0	5	6	0.4	8.4				
12581	7.2	<0.1	0.2	<0.1	0.1	8.8	3	4	0.3	9.1				

a. Few Fe-Mn<sup>2+</sup> bearing aggregates.

b. Range is 0.12 to 0.16 g/cc.

Soil type: Monongahela silt loam

Soil Nos. : 559Tenn-71-26

Location: Putnam County, Tennessee, TN-SCD-6; One mile south of Algood on Jones farm; 1000 feet east of homesite and 30 feet east of corner of woodland on corner of Draper farm. Photo AEW-1N-43.

Vegetation and Use: Broom sedge, golden rod, blackberries; idle for the past 15 years.

Slope and Land Form: 2-3 percent; probably a pediment terrace.

Drainage and Permeability: Moderately well drained, surface runoff slow; internal drainage moderate to slow; slow permeability due to impervious fragipan.

Parent Material: Old general alluvium washed from upland soils derived from shale, sandstone and some limestone.

Samples Collected by: Edwood Pederson, J. Fleming, M. E. Springer, J. A. Elder D. K. Springer, G. T. Jackson, B. C. Cox, December 2, 1959.

Profile Described by: J. A. Elder, M. E. Springer, B. C. Cox, G. T. Jackson, December 2, 1959.

Horizon and

Lincoln

Lab. No. Depth

Ap	0 to 7 inches	Brown (10YR5/3) loam or silt loam with weak fine granular structure; very friable; many roots; clear wavy boundary.
----	---------------	---

E1	7 to 11 inches	Pale brown to light yellowish brown (10YR6/3-6/4) silt loam with weak fine subangular blocky structure; friable; many roots and pores; clear wavy boundary.
----	----------------	---

E21	11 to 15 inches	Light yellowish brown (2.5Y6/4) to (10YR 6/4) silt loam with weak fine angular blocky structure; friable; many roots, common pores; gradual smooth boundary.
-----	-----------------	--

E22	15 to 26 inches	Light yellowish brown (2.5Y6/4) to (10Y6/4) fine silt loam with moderate medium subangular blocky structure; friable; common roots; clear smooth boundary.
-----	-----------------	--

E3m1	26 to 31 inches	Light yellowish brown (2.5Y6/4) silt loam with common medium distinct mottles of yellowish brown (10YR5/6) and common fine faint mottles of light gray (10YR7/1); massive; friable; few fine roots; clear smooth boundary.
------	-----------------	--

E3m2	31 to 39 inches	Light yellowish brown (10YR6/4) silty clay loam with common medium faint mottles of yellowish brown (10YR5/6) and brownish yellow (10YR6/6) and few fine faint mottles of light gray (10YR7/1); massive; few fine roots; friable to firm; clear smooth boundary.
------	-----------------	--

E3m3	39 to 48 inches	Light gray (10YR7/1) and yellowish brown (10YR5/6-6/6) fine silt loam with few coarse distinct streaks of strong brown (7.5YR5/8); massive, friable to firm; clear smooth boundary.
------	-----------------	---

Du1	48 to 54 inches	Light gray (2.5Y7/2) and light yellowish brown (2.5Y6/4) silt loam with few streaks of strong brown (7.5YR5/6); massive; friable to firm.
-----	-----------------	---

Du2	54 to 60 inches plus	Coarsely variegated red (2.5YR4/8), strong brown (7.5YR5/8) light gray (10YR7/2), and yellowish brown (10YR5/6) clay loam with a massive structure; firm.
-----	----------------------	---

Remarks: Colors and consistency are for moist soil.

SOIL SURVEY LABORATORY  
Lincoln, Nebraska

LOCATION Putnam County, Tennessee

SOIL TYPE Monongahela silt loam

LAB NOS. 12582-12590

SOIL NOS. S59Tenn-71-27

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1R1a				PARTICLE SIZE DISTRIBUTION (in mm.)			(per cent) 3A1			TEXTURAL CLASS	
			VERY FINE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	II	III	> 2		
12582	0-7	Ap	0.4a	1.1a	1.6	18.7	14.8	51.1	12.3	44.6	34.2	Tr.	sil	
12583	7-12	A2	0.4a	0.9a	1.0	12.0	8.9	60.4	16.4	31.0	46.5	Tr.	sil	
12584	12-17	B21	0.5a	0.9a	1.1	14.5	11.2	53.9	17.9	35.1	40.0	Tr.	sil	
12585	17-26	B22	0.6a	0.7a	1.2	16.5	13.1	48.8	19.1	41.0	33.1	Tr.	1	
12586	26-30	B3m1	0.5a	0.9a	1.2	18.6	14.8	45.9	18.1	44.4	30.1	Tr.	1	
12587	30-42	B3m2	0.5a	0.8a	1.3	19.2	15.6	45.2	17.4	45.5	29.5	Tr.	1	
12588	42-53	B3m3	0.5	0.9	1.4	19.9	16.3	43.3	17.7	45.8	28.4	Tr.	1	
12589	53-68	B3m4	0.2	1.2	1.7	23.9	18.0	33.2	21.8	48.5	19.9	Tr.	1	
12590	68-95+	Cg	0.6	2.0	2.7	36.3	23.8	22.8	11.8	60.7	11.3	Tr.	fsl	
	DH		6Gla	ORGANIC MATTER				WATER TENSILE				WATER CONTENT		
	8Gla		Free Iron as H <sub>2</sub> O Fe <sub>2</sub> O <sub>3</sub> 1:1	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Field 4B4 Water	State 4Ala 4B3 Water	30-Cm 4B3 g/cc	0.D. 4Alc g/cc	4B1b 4Alh g/cc	1/3- Bar %	4B2 15-Bar %	
12582	6.6		1.2	0.60	0.057	10	19.3	1.57	18.7	1.58	1.61	15.3	5.0	
12583	6.3		1.4	0.29	0.026	11	20.6	1.54	19.7	1.54	1.58	19.3	6.4	
12584	4.9		1.6	0.18	0.022		20.3	1.61b	19.0	1.63b	1.66b	20.8	6.8	
12585	4.8		1.7	0.13	0.018		20.8	1.54	20.3	1.54	1.58	16.8	7.5	
12586	4.8		1.7	0.07			17.7	1.72	17.3	1.72	1.73	17.2	7.2	
12587	4.8		1.6	0.06			14.8	1.79	16.1	1.76	1.80	15.6	6.3	
12588	4.6		2.0	0.06			14.6	1.78	16.1	1.76	1.78	15.6	7.6	
12589	4.6		2.4	0.08			16.4	1.74			1.75	16.8	9.8	
12590	4.6		1.0	0.04									5.6	
	5A1a		EXTRACTABLE CATIONS 5B1a				5C3	5Cl	5B1a	5A3a	6Gla			
	CATION EXCHANGE CAPACITY NH <sub>4</sub> + CEC		6N2b	6O2b	6P2a	6Q2a	6H1a	Base Sat. % on Sum Cations	Base Sat. % NH <sub>4</sub> + OAc Bases	Sum Ext. me	Sum Ext. equiv. 100g	CaCO <sub>3</sub> Cations equivalent %		
			Ca	Mg	Na	K	H							
			milliequivalents per 100g soil											
12582	5.0	4.2	0.5	<0.1	0.1	2.2	68	96	4.8	7.0	< 1			
12583	5.5	3.8	0.4	<0.1	0.1	3.4	56	78	4.3	7.7				
12584	5.7	1.4	0.2	<0.1	0.1	6.3	21	30	1.7	8.0				
12585	6.4	1.0	0.1	<0.1	0.1	7.8	13	19	1.2	9.0				
12586	6.2	0.2	0.5	<0.1	0.1	7.5	10	13	0.8	8.3				
12587	5.4	<0.1	0.2	<0.1	0.1	7.3	4	6	0.3	7.6				
12588	5.7	<0.1	0.4	<0.1	0.1	8.5	6	9	0.5	7.8				
12589	6.4	<0.1	0.2	<0.1	0.1	8.5	3	5	0.3	8.8				
12590	3.4	<0.1	0.4	<0.1	<0.1	4.4	8	12	0.4	4.8				

a. Few Fe-Mn? bearing aggregates.

b. Range is 0.12 to 0.16 g/cc.

Soil type: Monongahela silt loam

Soil No.: 859Tenn-71-27

Location: Putnam County, Tennessee, 1 1/4 miles southwest of Algood; 1/4 mile north of Tennessee Central Railroad; 30 ft. north of fence midway between gravel road and woodlot, Boatman farm. Photo AEW-LN-23.

Vegetation and Use: Broom sedge predominates; few scattered red cedar; pasture.

Slope and Land Form: 3 percent slope, probably a pediment terrace.

Drainage and Permeability: Moderately well drained, surface runoff slow to moderate; internal drainage moderate to slow; slow permeability due to fragipan.

Parent Material: Old general alluvium washed from upland soils derived from shale, sandstones and some limestone.

Samples Collected by: Edwood Pederson, M. E. Springer, J. A. Elder, D. K. Springer, G. T. Jackson, B. C. Cox, S. R. Bacon, J. Fleming.

Profile Described by: G. T. Jackson, December 3, 1959.

Horizon and

Lincoln

Lab. No. Depth

Ap 12582	0 to 7 inches	Brown (10YR5/3) silt loam with a weak fine granular structure; very friable; abrupt wavy boundary.
-------------	------------------	--

A2 12583	7 to 12 inches	Pale brown (10YR6/3) to light yellowish brown (10YR6/4) silt loam with a weak medium granular structure; friable; clear wavy boundary.
-------------	-------------------	--

B2I 12584	12 to 17 inches	Yellowish brown (10YR5/4) to light yellowish brown (10YR6/4) silty clay loam or silt loam with a weak fine subangular blocky structure; friable; common pores; few charcoal fragments; clear wavy boundary.
--------------	--------------------	---

B2G 12585	17 to 26 inches	Yellowish brown (10YR5/4) to light yellowish brown (10YR6/4) silty clay loam with a moderate medium subangular blocky structure; friable; common pores; few fine char fragments; boundary clear wavy.
--------------	--------------------	---

B3al	26 to 30	Yellowish brown (10YR5/6) loam with many coarse mottles of
------	----------	--

**SOIL SURVEY LABORATORY**  
Lincoln, Nebraska

LOCATION Putnam County, Tennessee

SOIL TYPE Muskingum silt loam

LAB. NOS. 12678-12681

SOIL NOS. S59Tenn-71-28

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1Bla		PARTICLE SIZE DISTRIBUTION (in mm.)				(per cent) 3A1			TEXTURAL CLASS					
			VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY <0.002	INTERNATIONAL II 0.2-0.02	III 0.02-0.002	2A2 > 2 mm					
12678	0-2	A1	0.9	0.8	0.9	13.4	15.7	48.6	19.7	40.8	35.0	9	1				
12679	2-8	A2	1.0a	0.9b	1.1	14.4	16.1	46.8	19.7	41.8	33.4	12	1				
12680	8-17	BC	2.5b	1.4b	1.2	14.3	15.0	43.9	21.7	39.0	31.7	22	1				
12681	17-25	C1	1.2b	1.7b	2.1	23.6	23.6	35.9	11.9	54.2	24.5	3	vfs1				
pH			ORGANIC MATTER				6C1a	BULK DENSITY				4B2					
			8C1a H <sub>2</sub> O 1:1				Free Organic Carbon %	6B1a Nitrogen	C/N	Irras Fe <sub>2</sub> O <sub>3</sub>	Field Water	State 4B4	30-Cm. 4Ala	0.D. 4B3	4Alc Water g/cc	4Aih g/cc	15-Bar Water %
12678	5.0					4.88	0.229	21	1.8							9.9	
12679	5.0					1.06	0.074	14	1.9							7.9	
12680	4.9					0.29	0.034	8	2.4							8.3	
12681	4.8					0.13	0.023		1.6							5.0	
EXTRACTABLE CATIONS			5A1a CATION EXCHANGE CAPACITY MELOCAC	5B1a	5C1	5B1a	5A3a										
			6N2b Ca	6O2b Mg	6P2a Na	6O2a K	6O1a H	Base Sat.% on Sat Cations	Base Sat.% NH <sub>4</sub> OAc	Sum Ext.	Sum Ext.						
			milliequivalents per 100g soil														
12678	14.2	0.8	1.0	<0.1	0.3	19.1	10	15	2.1	21.2							
12679	7.4	0.1	0.2	<0.1	0.1	12.2	3	5	0.4	12.6							
12680	7.4	0.3	0.2	<0.1	0.2	9.7	7	9	0.7	10.4							
12681	4.7	0.2	0.2	<0.1	0.1	6.3	7	11	0.5	6.8							

a. Common Fe-Mn? bearing aggregates.

b. Few Fe-Mn? bearing aggregates.

Soil type: Muskingum silt loam

Soil No.: 5997mm-71-28

Location: Putnam County, Tennessee. 1.1 miles east of Monterey High School along Clarkrange road; 100 feet north of road. Photo AEW-3N-41.

Vegetation and Use: Mixed upland oak forest.

Slope and Land Form: Uneroded 15 percent; upland north - facing slope; elevation 1850 feet.

Drainage and Permeability: Somewhat excessively drained with rapid surface runoff and medium to rapid internal drainage; moderate permeability.

Parent Material: Predominantly siltstone; Pennsylvanian rocks.

Samples Collected by: J. A. Elder, G. T. Jackson, B. C. Cox, S. R. Bacon - December 10, 1959.

Profile Described by: G. T. Jackson, December 10, 1959.

Horizon and

Lincoln

Lab. No. Depth

A1	0 to 2	Very dark gray brown (10YR3/2) silt loam with weak fine granular structure; very friable; many roots; few small siltstone fragments; clear wavy boundary.
12678	inches	

A2	2 to 8	Brown (10YR4/3) silt loam with weak fine granular structure; friable; many roots; few small siltstone fragments; gradual wavy boundary.
12679	inches	

BC	8 to 17	Yellowish brown (10YR5/6) silt loam with weak fine and medium subangular blocky structure; few thin discontinuous clay films; friable; many roots; numerous small siltstone fragments; gradual wavy boundary.
12680	inches	

C1	17 to 25	Yellowish brown (10YR5/6) loam with weak fine subangular blocky structure; few roots; numerous siltstone fragments.
12681	inches	

Remarks: Colors and consistency are for moist soil. C1 horizon contained about 10 percent siltstone fragments; these were discarded from the sample.

SOIL SURVEY LABORATORY  
Lincoln, Nebraska

LOCATION Putnam County, Tennessee

SOIL TYPE Muskingum silt loam

LAB NOS. 12682 - 12685

SOIL NOS. S59Tenn-71-29

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1Bla						PARTICLE SIZE DISTRIBUTION (in mm.)			3Al (per cent)			TEXTURAL CLASS
			VERY COARSE SAND 2.1	COARSE SAND 1.0-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY, <0.002	INTERNATIONAL	II	III	IV > 2'		
12682	0-2	A1	1.4a	1.6b	3.2	7.3	19.4	51.8	15.3	47.1	28.9	18	sil		
12683	2-9	A2	2.1b	1.5b	2.9	7.3	18.8	50.4	17.0	44.8	29.2	17	sil/1		
12684	9-19	BC	2.7b	1.8b	2.8	6.8	18.1	44.5	23.3	43.2	23.9	11	1		
12685	19-30	C1	3.2b	2.0b	1.5	3.9	11.5	40.3	37.6	31.8	22.5	16	cl		
	pH		6C1a Free	6C1a ORGANIC CARBON	6B1a NITROGEN										
	8C1a H <sub>2</sub> O 1:1														
12682	4.7		2.0	3.94	0.139	28								8.1	
12683	4.9		2.2	0.56	0.041	14								6.3	
12684	5.0		2.8	0.22	0.026									9.8	
12685	4.9		5.6	0.17	0.033									15.6	
	5A1a CATION EXCHANGE CAPACITY NED. OAC		EXTRACTABLE CATIONS 5B1a					5C3 Base Sat. % on Sum Cations	5C1 Base Sat. % NH <sub>4</sub> OAc Bases	5B1a Sum Ext.	5A3a Sum Ext. Options me/100g				
			6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H								
			milliequivalents per 100g soil												
12682	10.7	0.2	0.2	<0.1	0.2	15.8	4	6	0.6	16.4					
12683	4.8	<0.1	<0.1	<0.1	0.1	6.1	2	2	0.1	6.2					
12684	6.6	0.1	0.2	<0.1	0.1	7.3	5	6	0.4	7.7					
12685	11.6	<0.1	0.4	<0.1	0.2	12.7	4	5	0.6	13.3					

a. Common Fe-Mn? bearing aggregates.

b. Few Fe-Mn? bearing aggregates.

Soil type: Muskingum silt loam

Soil No.: 859 Tenn-71-29

Foothills Division, Tennessee Department of Environment and Conservation, Tennessee High School

Vegetation and Use: White, black and southern red oak with some Virginia pine.  
Cut-over forest.

Slope and Land Form: Uneroded 16 percent slope; upland southeast facing slope;  
elevation about 1850 feet.

Drainage and Permeability: Somewhat excessively drained with rapid surface  
~~runoff and medium to rapid internal drainage; moderate permeability.~~

SOIL SURVEY LABORATORY  
Lincoln, Nebraska

LOCATION Hardin County, Tennessee

SOIL TYPE Paden silt loam

LAB NOS. 12316-12325

SOIL NOS. 559Tenn-36-2

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1Bla						PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)			3Al			TEXTURAL CLASS
			VERY SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY <0.002	INTERNATIONAL		2A2			
			II	III	> 2										
12316	0-2	A1	0.2a	1.0a	0.7b	3.8	3.2	82.9	8.2	44.6	43.9	-	-	-	si
12317	2-9	A2	0.3c	0.6c	0.6c	3.2b	2.9	82.8	9.6	44.6	43.2	-	-	-	si
12318	9-18	B21	0.1c	0.4c	0.4c	2.6d	2.6	68.6	25.3	32.9	40.0	-	-	-	sil
12319	18-23	B22	0.2c	0.6b	0.5d	3.6	3.7	68.3	23.1	35.8	38.6	-	-	-	sil
12320	23-26	B23	0.4c	0.4b	0.5d	4.4	4.6	69.5	20.1	36.5	40.5	-	-	-	sil
12321	26-42	B3m	0.2c	0.2b	0.4d	4.1	4.8	65.6	24.7	36.1	37.1	-	-	-	sil
12322	42-52	IIB21b	<0.1	0.1	0.4	5.0	4.9	47.3	42.3	26.9	28.7	-	-	-	sic
12323	52-71	B22b	0.1	0.1	0.5	5.8	5.0	38.5	50.0	23.1	24.3	-	-	-	c
12324	71-87	B3b	<0.1	0.1	0.5	6.6	5.5	42.5	44.8	24.8	27.6	-	-	-	sic
12325	87-111	Cb	<0.1	0.2	0.7	9.3	8.0	44.4	37.4	32.1	26.3	-	-	-	sic1
pH			ORGANIC MATTER						6Clia	BULK DENSITY			4B2		
80la H <sub>2</sub> O 1:1			6Ala ORGANIC CARBON %	6Bla NITROGEN %	G/N	Ironas Fe <sub>2</sub> O <sub>3</sub> %	Free Water %	Field State	30-Cm.	4B4	4Ala Water %	4B3	4Alc Water %	4Alh Water %	15-Bar Water %
12316	4.8			3.38	0.188	18	1.0								5.6
12317	4.7			0.90	0.066	14	1.1	21.4	1.44	25.0	1.44	1.45	1.44	1.49	3.7
12318	4.9			0.28	0.026	8	0.7	21.7	1.46	24.2	1.44	1.44	1.49	1.49	10.6

Soil type: Padon silt loam

Soil No.: 899Tenn-36-2

Location: Hardin County, Tennessee, 22 miles north of Savannah on Cravens Landing road on C. H. Hughes farm, 100 yards west of gravel road.

Photo: ATK-6P-88 (1955)

Vegetation and Use: Cutover forest of red oak, post oak, white oak, and sweet gum. Few small patches of cedar and sumac; scattered patches of sedges grass and briars.

Slope and Land Form: Gently sloping (3 percent). Broad, gently sloping ridges on

Drainage and Permeability: Moderately well-drained; medium to slow runoff and slow internal drainage. Permeability is moderately slow.

Parent Material: Loess overlying old general alluvium on terraces.

Samples collected by: C. B. Brinig, Edwood Pedersen, George Phibbs, T. R. Love, W. H. Proffitt, E. T. Lamplrey, Bobby Hinton, and E. C. Sease. October 19, 1959.

Profile described by: W. H. Proffitt, T. R. Love, and E. C. Sease. October 19, 1959

Horizon and

Lincoln

Lab. No. Depth

A1 12316	0 to 2 inches	Very dark grayish brown (10YR 3/2) silt loam; weak to medium fine granular structure; very friable; many fine roots, clear smooth boundary.
A2 12317	2 to 9 inches	Light yellowish brown (10YR 6/4) to yellowish brown (10YR 5/4) silt loam; weak fine granular structure; very friable; many fine roots; clear smooth boundary.
B2 12318	9 to 18 inches	Dark yellowish brown (10YR 4/4) to strong brown (7.5YR 5/6) fine silt loam; weak fine subangular blocky structure; friable; common small roots; clear smooth boundary.
B2 12319	18 to 23 inches	Yellowish brown (10YR 5/4-5/6) fine silt loam; weak fine subangular blocky structure; friable; few fine pores; few roots; clear wavy boundary.
B2 12320	23 to 26 inches	Yellowish brown (10YR 5/6) silt loam with common fine and medium faint mottles of light yellowish brown (10YR 6/4).

**SOIL SURVEY LABORATORY**  
Lincoln, Nebraska

LOCATION Hardin County, Tennessee

SOIL TYPE Paden silt loam

LAB NOS. 12326 - 12334

SOIL NOS. S59Tenn-36-3

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1Ela						PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)			3A1			TEXTURAL CLASS	
			VERY COARSE SAND 2.1	COARSE SAND 1.0-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY <0.002	INTERNATIONAL		2A2				
			II	III			0.2-0.02	0.02-0.002								
12326	0-1	A1 <sup>1/</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	
12327	1-8	A2	0.4a	1.2b	1.6c	5.0	4.5	77.7	9.6	41.7	42.9	-	sil			
12328	8-16	B21	0.2a	0.6b	1.0c	3.0	2.8	66.8	25.6	31.7	39.4	-	sil			
12329	16-23	B22	<0.1	0.6b	1.0c	3.1	2.9	65.3	27.1	30.7	39.1	-	sicl/sil			
12330	23-28	B3	0.1a	0.7b	1.2c	3.6	3.8	65.0	25.6	31.6	39.0	-	sil			
12331	28-34	B3m1	0.2a	0.9b	1.9c	6.7	6.8	61.9	21.6	37.1	35.0	-	sil			
12332	34-46	B3m2	0.2a	1.0b	2.2c	7.5	8.0	55.9	25.2	37.0	30.8	-	sil			
12333	46-67	IIB21b	0.3a	1.1c	2.9	10.0	10.9	44.4	30.4	36.2	24.2	-	cl			
12334	67-91+	B3b	0.2a	1.0c	1.8c	11.6	13.4	30.4	41.6	35.7	15.6	-	c			
pH			ORGANIC MATTER			6C1a Free Krenas Fe <sub>2</sub> O <sub>3</sub>	6B1a ORGANIC CARBON	Field Water	State %	POLY DENSITY 30-Cm. Water	g.D. g/cc	4Alh 4Alc	4Ah g/cc	4B2		
	8C1a H <sub>2</sub> O 1:1			6Ala NITROGEN	C/N	%	%	4B4	4Ala	4B3	4Alc	4Ah	15-Bar Water			
12326	4.3			-	-	-	-									
12327	4.7			0.69	0.041	17	1.1								3.7	
12328	4.0			0.49	0.038	13	0.8	23.2	1.41	26.2	1.39	1.46	10.9			

Soil type: Redden silt loam

Soil No. : 859Tenn-36-3

Location: Hardin County, Tennessee, 2.6 miles north of Crump. In woods 75 feet north of gravel road half way between state highway 69 and Bethlehem Church. On Roy Welch farm. Photo: AII-7F-20(1955).

Vegetation and Use: Forest of red oak, black oak, post oak, hickory, and few cedar.

Slope and Land Form: Gently sloping (2-3 percent slope). Broad gently sloping ridge. On north facing slope.

Drainage and Permeability: Moderately well-drained; medium to slow runoff and slow internal drainage. Permeability is moderately slow.

Parent Material: Loess overlying old general alluvium on old high terrace.

Samples collected by: Edwood Pedersen, George Phibbs, W. H. Proffitt, T. R. Love, and E. C. Sease. October 20, 1959.

Profile described by: W. H. Proffitt, T. R. Love, and E. C. Sease. October 20, 1959.

Horizon and

Macrolayer

Lab. No. Depth

A1 12326 0 to 1 inch Dark gray (10YR 4/1) and dark grayish brown (10YR 4/2) to grayish brown (10YR 5/2) silt loam; weak fine granular or crumb structure; very friable; many small roots; clear smooth boundary. (Sampled for pH only).

A2 12327 1 to 8 inches Light yellowish brown (10YR 6/4) to yellowish brown (10YR 5/4) silt loam; weak fine granular structure; very friable; many roots; clear wavy boundary. 6 to 8 inches thick.

B2 12328 8 to 16 inches Strong brown (7.5YR 5/6) silty clay loam to silt loam; moderate medium subangular blocky structure; friable; common small roots; clear wavy boundary. 8 to 10 inches thick.

B2 12329 16 to 23 inches Yellowish brown (10YR 5/6) silt loam; weak fine subangular blocky structure; friable; common small roots; clear wavy boundary. 6 to 10 inches thick.

B3 12330 23 to 28 inches Yellowish brown (10YR 5/4-5/6) silt loam with few medium faint mottles of grayish brown (10YR 5/2), strong brown (7.5YR 5/6) and yellowish red (5YR 4/6); weak fine and medium subangular blocky structure; friable; common small pores; clear smooth boundary. 2 to 8 inches thick.

B3al 12331 28 to 34 inches Yellowish brown (10YR 5/4-5/6) silt loam with common fine and medium faint mottles of light brownish gray (10YR 6/2), dark brown (7.5YR 4/4), grayish brown (10YR 5/2) and light yellowish brown (10YR 6/4); moderate fine and medium subangular blocky structure; friable; gray (10YR 5/1) to dark gray (10YR 4/1) clay films on a few pedes; common fine tubular holes or pores; clear wavy boundary. 6 to 10 inches thick.

B3a2 12332 34 to 46 inches Yellowish brown (10YR 5/4) silty clay loam with common medium prominent mottles of red (2.5YR 4/6), strong brown (7.5YR 5/6) brownish yellow (10YR 5/6) and gray (10YR 5/1); moderate fine and medium subangular and angular blocky structure; firm; patchy clay films not as distinct as in horizon below; occasional small roots; clear wavy boundary. 3 to 16 inches thick.

B3a2b 12333 46 to 67 inches Mottled red (2.5YR 4/6), yellowish brown (10YR 5/6), dark brown (7.5YR 4/4), and gray (10YR 6/1) silty clay; mottles are many, medium, distinct; strong fine and medium subangular and angular blocky structure; firm to very firm; continuous clay films; occasional small root; few silica coatings on pedes; clear wavy boundary. 17 to 25 inches thick.

B3b 12334 67 to 91 inches Variegated yellowish red (5YR 4/6), brownish yellow (10YR 6/6) and yellowish brown (10YR 5/6) clay; weak medium angular blocky structure; very firm; seams of light yellowish brown (2.5YR 6/4) light olive brown (2.5YR 5/4) and grayish brown (2.5YR 5/2) about 1 to 3 mm. wide.

Remarks: Colors given are for moist soil.

SOC-421  
10-64 (Rev. 9-68)

U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

SOIL Pembroke silt loam

SOIL Nos. 855Tenn-16-21 LOCATION Coffee County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland

LAB. Nos. 551930- 551937

Depth (in.)	Horizon	191b													Coarse fragments 3B1			
		Size class and particle diameter (mm) 3A1			Sand				Silt			Int. II (0.2-0.02) (2-0.1)	Cm	2A2 ≥ 2 2-19 19-76 Pct. of ≤ 76mm				
		Total (2-0.05) Pct. of < 2 mm	Silt (0.05- 0.002)	Clay (+ 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.15)	Very fine (0.1-0.05)	Int. III (0.05-0.02) (0.02- 0.002)								
0-7	A1	71.7	16.9	1.7 <sup>a</sup>	1.8	0.9	3.1	3.9		48.9	28.8				-			
7-14	A3	66.0	25.2	1.5	1.5	0.6	1.9	3.3		47.7	22.9				-			
14-18	B1	64.1	26.8	1.5	1.4	0.5	2.0	3.7		46.3	22.9				-			
18-24	B2	62.0	28.8	1.3	1.2	0.5	2.1	4.1		43.9	23.7				tr.			
24-30	B3	60.0	31.3	0.6	0.9	0.5	2.3	4.4		43.1	22.9				-			
30-47	B1b	53.4	37.8	0.7	0.7	0.4	2.3	4.7		39.0	21.7				-			
47-63	B2b	38.9	53.2	0.6	0.6	0.4	2.2	4.1		27.3	17.3				-			
63-75	B3b	29.0	63.5	0.6	0.6	0.4	2.1	3.8		19.4	15.0				-			
75-87	C11b	23.1	70.8	0.2	0.4	0.4	1.8	3.3		16.1	11.6				-			
87-99	C12b	24.0	69.5	0.2	0.5	0.4	2.0	3.4		17.1	11.6				-			
99-111	C13b	25.7	64.0	0.4	1.0	1.1	3.7	4.1		17.2	14.7				-			
Depth (in.)		Gels Organic carbon		Nitrogen	C/N		Carbonate as CaCO <sub>3</sub>	Ext. Iron as Fe2O <sub>3</sub>	Bulk density			401	Water content			401	pH	
		Pct.	Pct.				Pct.	Pct.	4A1a kg/bar	4A1h Oven dry	g/cc	COLE	4B1c 36 bar	4B2 15 bar	WRD		SClc (1:1)	SCla (1:1)
0-7		1.14	0.093	12					1.8								6.6	
7-14		0.30	0.039						2.6								5.1	
14-18		0.04	0.028						2.8								5.0	
18-24		0.04	0.024						3.0								5.0	
24-30		tr.	0.022						3.6								5.0	
30-47		0.04	0.014						4.4								5.0	
47-63		0.02	0.029						6.5								5.0	
63-75		tr.	0.033						8.5								5.0	
75-87		0.02	0.038						9.3								5.0	
87-99		0.02	0.040						8.5								5.0	
99-111		0.02	0.037						8.2								5.2	
Depth (in.)		Extractable bases 501a					Gels	CEC	601d				Ratios to clay			SD3	Base saturation	
		6N2d	802b	6P2a	6Q2a		Ext. acidity		5A1d Sum cation	Ext. Al			CEC Sum	Ext. iron	15-bar water	Ce/Mg	SC3 Sum cation Pct.	SC1 NH <sub>4</sub> OAc Pct.
0-7		6.8	0.5	0.1	0.2		4.2	11.8									64	
7-14		2.1	0.8	tr.	0.1		8.0	11.0								27		
14-18		0.7	1.1	tr.	0.1		9.4	11.3								17		
18-24		0.2	0.8	tr.	0.1		9.9	11.0								10		
24-30		0.1	0.5	0.1	0.1		10.3	11.1								7		
30-47		0.1	tr.	0.1	0.1		10.9	11.2								3		
47-63		0.1	0.9	0.1	0.1		14.2	15.4								8		
63-75		tr.	0.8	0.1	0.1		15.8	16.8								6		
75-87		0.2	0.6	0.1	0.1		17.0	18.2								6		
87-99		1.4	1.2	tr.	0.1		17.0	18.7								9		
99-111		0.6	1.3	tr.	0.1		15.7	17.7								11		
Depth (in.)		Clay Fraction Analysis 7A1b-d																
		Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	GRANITE									
										7A2 K-ray								
0-7										7A3								
7-14																		
14-18																		
18-24																		
24-30																		
30-47																		
47-63					x													
63-75																		
75-87				x	x													
87-99					x	x												
99-111																		

Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, Mi. = mica,  
Int. = Interstratified layer, Qtz. = quartz, Kl. = kaolinite

Relative amounts: blank = not determined, dash = not detected,  
tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

a. Undecomposed organic matter in sand fractions.

Soil Type: Fumbridge silt loam, eroded undulating phase.

Soil No.: S55Tenn-16-21

Location: Coffee County, Tennessee. 3.0 miles east of Hopewell School on gravel road leading towards Shady Grove. North 0.15 miles on side road at Mud Creek to W. D. Riddle Farm. 200 yards north of mail box and 85 yards west of side road which is 60 yards north of fence at northeast corner of corn field. Aerial photo 6G-175.

Vegetation and land use: Lespedeza and weeds.

Slope and land form: 3 percent.

Horizon and  
Beltsville  
Lab. No.

Ap 551930	0 to 7 inches. Brown (10YR 4/3) friable silt loam; moderate fine to medium granular structure; contains many small roots.
A3 551931	7 to 14 inches. Brown (7.5YR 4/4) friable silt loam; moderate medium granular structure; contains a few black concretions 1.0 mm in diameter; pinholes and wormholes are common.
B1 551932	14 to 18 inches. Yellowish red (5YR 4/6) friable silty clay loam; weak to moderate fine and medium angular blocky structure; a few discontinuous clay skins and black coatings, apparently ferromanganese, on ped; contains a few small pinholes and black concretions 1.0 mm in diameter.
B2 551933	18 to 24 inches. Yellowish red (5YR 4/6) friable silty clay loam; moderate medium angular and subangular blocky structure; many thick discontinuous clay skins which are reddish brown (5YR 4/3); a few pale brown (10YR 6/3) light silty clay loam pockets and variegations; common black concretions and segregations 1.0 to 2.0 mm in diameter; contains a few pinholes.
B3 551934	24 to 30 inches. Irregular lower boundary which ranges mostly between depths of 30 to 40 inches but contains an occasional tongue to a depth of 52 inches which completely penetrates the horizon below. Yellowish red (5YR 4/6) friable to firm silty clay loam; fine and medium angular blocky structure; contains many medium prominent pale brown, light yellowish brown (10YR 6/3 - 6/4), and strong brown (7.5YR 5/6) variegations; many black concretions and segregations which range from 1.0 to 5.0 mm in diameter; clay skins are common and apparently contain an appreciable amount of ferromanganese material as the coatings have a blackish cast; a few fine pinholes present.
B1b 551935	30 to 47 inches. Upper boundary is irregular and ranges mostly between depths of 30 to 40 inches but an occasional tongue of the horizon above extends through this horizon into the horizon below. Dark reddish brown to dark red (2.5YR 3/4 - 3/6) friable to firm heavy silty clay loam; many medium prominent pale brown and light yellowish brown (10YR 6/3 - 6/4) variegations; moderate to strong fine and medium angular blocky structure; a few prominent clay skins and pale brown silt coatings on ped; contains a few black concretions 1.0 to 2.0 mm in diameter.
B2b 551936	47 to 63 inches. Abrupt smooth to wavy upper boundary with the upper limit at a depth of 47 inches and the lower limit at a depth of 52 inches. Dark reddish brown to dark red (2.5YR 3/4 - 3/6) firm silty clay; strong fine and medium angular blocky structure; ped coated with thick continuous clay skins; dark reddish brown and black concretions 1.0 to 2.0 mm in diameter, apparently ferromanganese, are common; contains a few very small chert fragments.
B3b 551937	63 to 75 inches. Dark reddish brown to dark red (2.5YR 3/4 - 3/6) very firm clay; moderate medium angular blocky structure; contains a few reddish yellow (7.5YR 6/8) variegations and small pockets of light yellowish brown and pale brown (10YR 6/4 - 6/3) clay and partially weathered rock; common small angular chert fragments; a few dark reddish brown and black concretions 1.0 mm in diameter.
C11b	75 to 87 inches. Dark red (2.5YR 3/6) with common medium prominent reddish yellow (5YR 6/8) variegations, very firm clay; weak coarse angular blocky structure; contains common fine prominent gray and light brownish gray (10YR 6/1 - 6/2) clay seams and/or small pockets; common whitish specks, apparently weathered chert; occasional reddish brown and black concretions less than 1.0 mm in diameter.
C12b	87 to 99 inches. Dark red (2.5YR 3/6) with common coarse and medium prominent yellow (10YR 7/6) and reddish yellow (7.5YR 6/6) variegations, very firm clay, weak coarse angular blocky structure; occasional gray clay seams of small pockets; a few reddish brown and black concretions 1.0 mm in diameter.
C13b	99 to 111 inches. Red (2.5Y 4/6) with common coarse and medium prominent reddish yellow (7.5YR 6/6 - 7/6) variegations; very firm clay; weak coarse angular blocky structure; common whitish specks which are apparently weathered chert; occasional gray clay seams or small pockets, some of which apparently have ferromanganese coatings.

SOIL Pembroke silt loam, eroded undulating phase SOIL Nos. 655Tenn-16-22 LOCATION Coffee County, TennesseeSOIL SURVEY LABORATORY Beltsville, MarylandLAB. Nos. 551941 - 551948

Depth (in.)	Horizon	Size class and particle diameter (mm) SAI												382 Cm	Coarse fragments 3B1			
		Total			Sand				Silt		Int. III		Int. II		2A2 ≥ 2		2-19 19-76	
		Sand (2-0.05) Pct.	Silt (0.05- 0.002) Pct. of < 2 mm	Clay (= 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02 Pct.	0.02- 0.002 Pct.	Int. III (0.2-0.02) Pct.	Int. II (0.02- 0.002) Pct.	(2-0.1) Pct.	< 2 mm Pct.	Pct. of < 76mm Pct.		
0-5	Ap	68.6	19.9	1.3	1.8	1.4	3.6	3.4	47.7	26.5					tr.			
5-14	B1	63.1	29.8	0.5	1.2	0.8	2.3	2.3	46.2	20.7					-			
14-26	B2	56.6	35.8	0.8	1.1	0.8	2.3	2.6	41.2	19.5					-			
26-31	B1b	56.1	36.7	0.4	0.9	0.8	2.4	2.7	40.8	19.5					-			
31-40	B21	55.8	36.6	0.5	0.8	0.8	2.6	2.9	40.4	20.0					-			
40-54	B22b	51.7	40.0	0.6	0.8	0.9	2.8	3.2	37.9	18.8					-			
54-66	B23b	45.2	46.1	0.7	1.1	1.1	2.8	3.0	34.3	15.8					-			
66-80	Cb	38.4	49.3	1.8	2.3	1.6	3.4	3.2	29.3	14.4					tr.			
Depth (in.)	Galia Organic carbon Pct.	Nitrogen Pct.	C/N Pct.	Carbonate as CaCO <sub>3</sub> Pct.	Ext. Iron as Fe2O3 Pct.	Bulk density			4D1 COLE	Water content			4C1 WRD in/n	pH				
						4A1a g/cc	4A1h 1/2 bar g/cc	Oven dry g/cc		4B1c Pct.	4B2 3/2 bar Pct.	15 bar Pct.		8C1c (1:1) KCl	8C1a (1:1) H <sub>2</sub> O			
0-5	1.06	0.107	10			1.9										7.4		
5-14	0.20	0.047				3.0										7.4		
14-26	0.06	0.036				3.6										6.4		
26-31	0.02	0.034				3.7										5.0		
31-40	0.04	0.031				4.0										4.9		
40-54	0.02	0.031				4.6										4.8		
54-66	0.04	0.034				6.1										4.9		
66-80	0.05	0.034				7.2										4.8		
Depth (in.)	Extractable bases 5B1a						6B1a		CEC		6B1d		Ratio to clay		8D3		Base saturation	
	6N2d Ca	6O2b Mg	6P2a Na	6Q2a K	Sum	Ext. acidity	6A3a Sum cations	Ext. Al	CEC Sum	Ext. Iron	6B1d		CEC Sum	Ext. Iron	15-bar water	Ca/Mg	5C3 Sum cations Pct.	5C1 NH <sub>4</sub> OAc Pct.
	meq/100 g																	
0-5	11.2	0.6	tr.	0.3		2.6	14.7										82	
5-14	8.0	0.6	0.1	0.2		3.0	11.9										75	
14-26	5.9	1.3	0.1	0.2		5.4	12.9										58	
26-31	1.6	2.1	tr.	0.2		10.1	14.0										28	
31-40	0.4	2.1	tr.	0.2		10.5	13.2										20	
40-54	0.3	1.6	tr.	0.2		11.1	13.2										16	
54-66	tr.	1.5	tr.	0.2		12.8	14.5										12	
66-80	tr.	1.5	tr.	0.2		13.8	15.5										11	
Depth (in.)	Clay Fraction Analysis 7A1b-d												Mt. = Montmorillonite, Chl. = chlorite, Vm. = Vermiculite, Mi. = mica, Int. = interstratified layer, Qtz. = quartz, Kl. = kaolinite					
	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Kl.	Gibbsite	DIA	7A2 X-ray	7A3		Relative amounts: blank = not determined, dash = not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.					
	7A2 X-ray																	
0-5																		
5-14																		
14-26			xxxx					xx										
26-31																		
31-40			xxx					xx										
40-54																		
54-66			xx	x				xxx										
66-80																		

Soil Type: Pumroke silt loam, eroded undulating phase.

Soil No.: 551944-22

Location: Coffee County, Tennessee. 3.3 miles south of Manchester on Highway 55. 200 feet east of highway, 150 feet north of large elm tree at old house site, and 200 feet north by east of dirt road leading to old house site. Aerial photo SG-182.

Horizon and  
Beltsville  
Lab. No.

A <sub>0</sub> 551941	0 to 5 inches. Dark brown (7.5YR 3/2) friable silt loam; weak to moderate fine granular structure; contains a few reddish brown (5YR 4/4) silty clay loam spots, apparently brought up from layer below; many small roots present.
B <sub>1</sub> 551942	5 to 14 inches. Dark reddish brown to yellowish red (5YR 3/4 - 4/6) friable silty clay loam; weak to moderate fine angular and subangular blocky structure; a few discontinuous clay skins on pads; contains a few black concretions 1.0 to 2.0 mm in diameter.
B <sub>2</sub> 551943	14 to 26 inches. Dark red (2.5YR 3/6) to dark reddish brown (5YR 3/4) friable silty clay loam; moderate medium angular to subangular blocky structure; a few thin distinct clay skins on vertical and horizontal faces; contains a few black concretions 1.0 mm in diameter.
B <sub>1b</sub> 551944	26 to 31 inches. Dark red to dark reddish brown (2.5YR 3/6 - 3/4) friable silty clay loam; moderate medium angular blocky structure; common fine faint reddish brown (5YR 5/4 - 4/4)

B <sub>21b</sub> 551945	31 to 40 inches. Dark reddish brown to dark red (2.5YR 3/4 - 3/6) firm silty clay; strong medium angular blocky structure; contains a few faint fine yellowish red (5YR 5/6) variegations; many prominent continuous clay skins which apparently are stained with ferromanganese; contains a few black concretions 0.5 to 1.0 mm in diameter; a few pinholes present.
B <sub>22b</sub> 551946	40 to 54 inches. Dark red (2.5YR 3/6 or 10YR 3/6) firm silty clay; strong medium angular blocky structure; common fine prominent reddish yellow (5YR 6/8) and pale brown (10YR 6/3) variegations; many prominent clay skins on faces of pads; a few black concretions 1.0 to 2.0 mm in diameter; occasional partially weathered chert fragments ranging up to 15 mm in diameter; few to common pinholes.
B <sub>23b</sub> 551947	54 to 66 inches. Dark red (2.5YR 3/6 or 10YR 3/6) firm silty clay; moderate to strong medium angular blocky structure; many prominent clay skins commonly stained with ferrimanganese giving the exterior of the pads a dark reddish brown (2.5YR 3/4) color; contains a few fine faint light yellowish brown (10YR 6/4) variegations; a few black concretions and segregations 1.0 mm in diameter; contains a small amount of chert fragments ranging in diameter from whitish specks

SOIL SURVEY LABORATORY  
Lincoln, Nebraska

LOCATION Hardin County, Tennessee

SOIL TYPE Pickwick silt loam

LAB NOS. 12307-12315

SOIL NOS. 859Tenn.36-1

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1Hla						PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)			3Al			2A2 > 2	TEXTURAL CLASS
			VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	INTERNATIONAL II 0.2-0.02	III 0.02-0.002					
12307	0-5	A <sub>p</sub>	0.1a	0.4b	0.5c	2.6c	2.3c	77.3	16.8	44.6	36.6	-	sil			
12308	5-10	B <sub>1</sub>	<0.1	0.1b	0.3c	1.1c	1.2c	70.6	26.7	30.2	42.3	-	sil/sicl			
12309	10-17	B <sub>21</sub>	<0.1	0.2d	0.2e	1.2	1.0	66.6	30.8	27.4	40.9	-	sicl			
12310	17-27	B <sub>22</sub>	0.1d	0.3d	0.3d	1.6e	1.5e	66.7	29.5	27.8	41.3	-	sicl			
12311	27-39	IIB21b	0.6d	0.7d	0.4	2.5	2.1	66.3	27.4	30.5	39.4	-	sicl/sil			
12312	39-54	B22b	0.3d	0.4d	0.5	3.2	2.7	55.0	37.9	25.4	34.3	-	sicl			
12313	54-75	B23b	0.1d	0.3d	0.5	4.1	3.5	53.0	38.5	26.9	32.2	-	sicl			
12314	75-101	B24b	0.2d	0.2e	0.6	5.0	4.4	46.0	43.6	25.0	28.5	-	sic			
12315	101-124	B25b	0.2d	0.3e	0.7	5.5	5.1	45.5	42.7	26.3	27.8	Tr.	sic			
pH			ORGANIC MATTER						SOIL DENSITY			4B2				
			8Gla $\text{H}_2\text{O}$ 1:1		6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	6C1a Iron as Fe <sub>2</sub> O <sub>3</sub> %	Field Water %	State Water %	30-Cm. Water %	0.D. 4Ah	15-Bar Water %			
12307	6.3				0.83	0.083	10	1.6	15.9	1.46	22.4	1.44	1.46	6.3		
12308	6.6				0.39	0.058	7	2.2	15.1	1.43	23.7	1.40	1.45	11.0		
12309	5.5				0.24	0.048		2.7	18.9	1.46	25.0	1.42	1.50	12.2		
12310	5.0				0.14	0.047		2.8	19.8	1.48	25.3	1.46	1.51	11.5		
12311	4.9				0.08			2.5	15.3	1.62	21.1	1.60	1.63	10.4		
12312	4.8				0.07			3.3	15.7	1.66	20.8	1.63	1.68	13.8		
12313	4.9				0.09			3.5	16.5	1.61	22.1	1.57	1.63	14.8		
12314	4.8				0.07			4.0						15.6		
12315	4.7				0.08			4.5						16.5		
5A1a CATION EXCHANGE CAPACITY $\text{NH}_4\text{OAc}$			EXTRACTABLE CATIONS 5B1a 6N2b 6O2b 6Hla 6P2a 6Q2a Ca Mg H Na K milliequivalents per 100g soil						5C1 Base Sat. % NH <sub>4</sub> OAc on Sum Cations	5C3 Base Sat. % NH <sub>4</sub> OAc on Sum Cations	5R1a Sum Ext. Cations me/100 g	5A3a Sum Ext. Cations me/100 g	8D3 Ca/Mg			
12307	7.7	6.0	0.8	3.9	<0.1	0.2	91	64	7.0	10.9						
12308	9.5	6.9	0.9	5.1	<0.1	0.2	84	61	8.0	13.1						
12309	11.8	4.0	3.5	6.8	0.1	0.3	67	54	7.9	14.7	1.1					
12310	11.3	1.0	3.3	9.5	<0.1	0.3	41	33	4.6	14.1						
12311	9.5	0.3	2.2	9.3	0.1	0.2	29	23	2.8	12.1						
12312	10.4	0.2	2.3	10.7	0.1	0.2	27	21	2.8	13.5						
12313	11.8	0.2	2.3	11.2	0.1	0.2	24	20	2.8	14.0						
12314	10.9	0.9	2.4	10.2	0.1	0.2	33	26	3.6	13.8						
12315	10.6	1.9	2.3	10.0	0.1	0.2	42	31	4.5	14.5	0.8					

- a. Many Fe-Mn? bearing aggregates. Common organic matter fragments.
- b. Few Fe-Mn? bearing aggregates. Trace carbonates. CaCO<sub>3</sub>?
- c. Trace carbonates. CaCO<sub>3</sub>?
- d. Many Fe-Mn? bearing aggregates.
- e. Few Fe-Mn? bearing aggregates.

Soil type: Pickwick silt loam

Soil Nos. : 559Tenn-36-1

Location: Hardin County, Tennessee 1½ miles north of Savannah on Craven Landing road ½ mile northeast on Kendrick Love farm. Photo: AIK-6F-88, 1955

Vegetation and Use: Lespedeza and Johnson grass.

Slope and Land Form: Gently sloping (3 percent), old high terrace. Top of ridge. (Elevation 442 feet).

Drainage and Permeability: Well-drained, with medium runoff and moderate permeability.

Parent Material: Thin loess mantle overlying old general alluvium

Samples Collected by: Edwood Pedersen, George Phibbs, W. H. Proffitt, Bobby Hinton, C. B. Breinig. October 19, 1959.

Profile described by: W. E. Proffitt and T. R. Love. October 19, 1959.

Horizon and

Lincoln

Lab. No.

Ap Depth

12307 0 to 5 inches Brown (10YR 4/3) silt loam; weak to moderate fine crumb structure; very friable; many fine roots; abrupt smooth boundary.

R1 12308 5 to 10 inches Dark brown (7.5YR 4/4) silt loam; weak fine subangular blocky to moderate fine granular structure; friable; many fine roots; abrupt smooth boundary.

R2 12309 10 to 17 inches Dark brown (7.5YR 4/4) to reddish brown (5YR 4/4) silty clay loam; moderate fine and very fine subangular blocky structure; friable; common small roots; clear smooth boundary.

R2 12310 17 to 27 inches Reddish brown (5YR 4/4) silty clay loam with few fine faint mottles of dark brown (7.5YR 4/4) and brown (10YR 4/3); moderate fine subangular blocky structure; friable; few small black concretions and segregations about 2.0 mm. to 5.0 mm. in diameter; few patchy clay films and silt coatings on pads; few small roots; gradual smooth boundary.

R2b 12311 27 to 39 inches Dark brown (7.5YR 4/4) silty clay loam with common fine and medium faint mottles of reddish brown (5YR 4/4) and brown (10YR 4/3) and dark brown (7.5YR 4/4) moderate fine subangular blocky structure; friable; few patchy clay films; several brown (10YR 5/3-4/3) grayish brown (10YR 5/2) and pale brown (10YR 6/3) silt loam and silty clay loam seams 1 to 5 mm. wide and 7 to 20 cm. long that extend to a depth of 34 inches; few block concretions and segregations 1 to 5 mm. in diameter; clear wavy boundary.

R2b 12312 39 to 54 inches Dark reddish brown (2.5YR 3/4) silty clay or silty clay loam with common fine faint mottles or variegations of dark brown (7.5YR 4/4), brown (10YR 4/3) and reddish brown (5YR 4/4); moderate fine subangular blocky structure; friable; patchy clay films; few black concretions and segregations 1 to 5 mm. in diameter; occasional weathered chert fragment 1 to 2 mm. in diameter; gradual smooth boundary.

R2b 12313 54 to 75 inches Dark red (2.5YR 3/6) to dark reddish brown (2.5YR 3/4) clay or silty clay; moderate fine subangular blocky structure; friable to firm; few fine faint variegations of dark brown (7.5YR 4/4), brown (10YR 4/3), and reddish brown (5YR 4/4); almost continuous clay films; few black concretions and segregations 0.5 to 2.0 mm. in diameter; occasional thin seam of brown silt loam or silty clay loam; few chert fragments 1 to 3 mm. in diameter; gradual smooth boundary.

R2b 12314 75 to 101 inches Dark red (2.5YR 3/6) clay with common fine prominent mottles or variegations of pale brown (10YR 6/3), light brownish gray (10YR 6/2) and brown (10YR 5/3); moderate fine subangular and angular blocky structure; firm; patchy clay films; few to common black concretions 0.5 to 3.0 mm. in diameter; occasional weathered chert fragment 2 to 3 mm. in diameter.

R2b 12315 101 to 124 inches Dark red (2.5YR 3/6) clay with common fine variegations of red (2.5YR 4/6), yellowish red (5YR 4/6); yellowish brown (10YR 5/6) pale brown (10YR 6/3) and light brownish gray (10YR 6/2); moderate fine subangular and angular blocky structure; patchy clay films; occasional small seam of pale brown (10YR 6/3) or light brownish gray (10YR 6/2) silty clay loam; few to common black concretions 0.5 to 3.0 mm. in diameter; occasional chert fragments 2 to 3 mm. in diameter.

Remarks: Colors given are for moist soil.



**Soil type:** Pickwick silt loam

**Sample No.:** 859 Tenn-36-6

**Location:** Hardin County, Tennessee, 2 miles south of Savannah, on Highway 69, 1/4 mile east on gravel road, on Warren Austin farm. Photo AIK-6F-90(1955)

**Vegetation and Use:** Johnson grass, crab grass, and weeds. The field appeared to have been plowed or disked four to six weeks prior to sampling.

**Slope and Land Form:** Gently sloping broad ridge on old high terrace. Slight southeast aspect. Elevation 445 feet.

**Drainage and Permeability:** Well drained, with medium runoff and moderate permeability.

**Parent Material:** Thin loess mantle overlying old general alluvium.

**Samples collected by:** C. B. Breinig, Edwood Pedersen, George Phibbs, W. H. Proffitt, and Bobby Hinton - October 21, 1959.

**Profile described by:** W. H. Proffitt and T. R. Love. October 21, 1959.

**Horizon and  
Lincoln**

Tab. No.	Depth	Description
Ap	0 to 6 inches	Dark brown (7.5YR 4/4) silt loam; weak fine to very fine crumb structure; very friable; many small roots; many small pores and wormholes; abrupt wavy boundary.
12351		
El	6 to 14 inches	Reddish brown (5YR 4/4) coarse silty clay loam; weak fine subangular blocky structure; very friable; common small roots; common pores; common worm channels filled with silty material from the Ap horizon; occasional concretion 1 mm. in diameter; gradual smooth boundary.
12352		
E21	14 to 20 inches	Yellowish red (5YR 4/6) silty clay loam; weak to moderate fine subangular blocky structure; very friable; few patchy grayish brown silt coatings on pedes; common fine roots; common small pores; few hard black rounded concretions (1 mm. in diameter); clear wavy boundary.
12353		
E22	20 to 32 inches	Reddish brown (5YR 4/4) silty clay loam; seams and pockets of yellowish red (5YR 5/6) silty material; moderate fine subangular blocky structure; friable; patchy clay films; few small roots; few small pores; common to many small black concretions and segregations (1-4 mm. in diameter); occasional quartzite pebble; clear wavy boundary.
12354		
IIR21b	32 to 41 inches	Dark red (2.5YR 3/6) light silty clay; occasional brown to yellowish brown (10YR 5/3-5/4) silty tongue about 1/2 inch in width; ped surfaces are dusky red (2.5YR 3/2) and dark reddish brown (2.5YR 3/4); strong fine subangular blocky structure; friable to firm; continuous thin clay films; few fine pores; few semirounded chert fragments; common black stains or coatings on some pedes; common small hard concretions 1 mm. in diameter; gradual wavy boundary.
12355		
E22b	41 to 52 inches	Dark red (2.5YR 3/6) silty clay; seams of brown (10YR 5/3) and yellowish brown (10YR 5/4) silt; strong fine subangular blocky structure; friable; continuous clay films; a few fine pores; occasional rounded chert fragment 5-10 mm. in diameter; few patchy black stains or coatings or segregations; diffuse smooth boundary.
12356		
E23b	52 to 65 inches	Dark red (2.5YR 3/6) clay or silty clay; few fine faint variegations of dark brown (7.5YR 4/4) lighter in texture; strong fine subangular blocky structure; friable; continuous thin clay films; occasional rounded chert fragments 1/2 inch to 1 inch in diameter; few small black hard concretions 1 to 5 mm. in diameter; diffuse smooth boundary.
12357		
E24b	65 to 92 inches (Not sampled)	Dark red (2.5YR 3/6) clay with grayish brown (10YR 5/2) and light grayish brown (10YR 6/2) mottles or variegations (probably due to weathered chert fragments).

**SOIL SURVEY LABORATORY**  
Lincoln, Nebraska

LOCATION Putnam County, Tennessee

SOIL TYPE Sequatchie loam

LAB NOS. 12686-12691

SOIL NOS. S59Term-71-30

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1Bla		PARTICLE SIZE DISTRIBUTION (in mm.)				(per cent) 3A1			TEXTURAL CLASS	
			VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	INTERNATIONAL	II 0.2-0.02	III 0.02-0.002	
12686	0-4	Allp	0.1	2.8	10.9	26.6	13.1	32.9	13.6	40.8	18.4	Tr.	fsl
12687	4-12	Al2p	0.1	2.4	9.1	22.8	11.5	33.6	20.5	35.7	19.9	-	1
12688	12-26	B2	0.1	1.8	6.4	19.3	13.1	35.5	23.8	38.3	20.6	Tr.	1
12689	26-35	B3	5.9a	13.5a	17.1	19.1	6.4	21.3	16.7	21.8	13.7	5	sl
12690	35-43	Dul	8.9a	14.6a	24.8	8.8	1.4	4.5	7.0	5.5	2.8	8	lcos/cos
12691	43-55	Du2	17.2a	33.1a	23.3	10.3	2.0	6.8	7.3	7.4	4.5	37	lcos

DN

6Cla

ORGANIC MATTER

PULK. DENSITY

WATER CLAYMENT

Soil type: Sequatchie loam

209

Soil No.: S59Tenn-71-30

Location: Putnam County, Tennessee, .35 mile east of Verble Church in Stamps Hollow (J. Little farm). Photo AEW-6N-54.

Vegetation and Use: Corn - continuous cultivation.

Slope and Land Form: Slightly eroded 3 percent slope; low young stream terrace; elevation 1000 feet.

Drainage and Permeability: Well drained; surface runoff and internal drainage are medium; moderate permeability.

Parent Material: Mixed old alluvium washed from soils underlain by sandstones, shales and limestones.

Samples Collected by: J. A. Elder, G. T. Jackson, S. R. Bacon, B. C. Cox - December 10, 1959

Profile Described by: G. T. Jackson, December 10, 1959.

Horizon and

Lincoln

Lab. No. Depth

Altp 12686 0 to 4 inches Brown (10YR4/3) loam with weak medium granular structure; friable; common roots; clear wavy boundary.

Al2p 12687 4 to 12 inches Brown (10YR4/3) to dark yellowish brown (10YR4/4) loam with weak coarse granular structure; friable but slightly firm in place; few roots; gradual smooth boundary.

B2 12688 12 to 26 inches Brown (7.5YR4/4) clay loam with weak medium and coarse subangular blocky structure; friable but slightly firm in place; very thin discontinuous clay films; few roots; gradual smooth boundary.

B3 12689 26 to 35 inches Brown (7.5YR4/4) sandy clay loam with weak medium and coarse subangular and angular blocky structure; common fine pores; friable; gradual wavy boundary.

Dul 12690 35 to 43 inches Strong brown (7.5YR5/6) sand; structureless; very friable.

Du2 12691 43 to 55 inches Strong brown (7.5YR5/6) gravelly sand; structureless; very friable; water rounded gravel and cobbles up to 6 inches in diameter are common; sizes greater than  $\frac{1}{2}$  inch mostly removed from sample; gravel and cobbles constituted 50 percent of original sample.

Remarks: Colors and consistency are for moist soil. This site is often flooded; layers below the Ap indicate silt movement along old root channels and pores.

**SOIL SURVEY LABORATORY**  
Lincoln, Nebraska

LOCATION Putnam County, Tennessee

SOIL TYPE Sequatchie loam

LAB NOS. 12698-12702

SOIL NOS. S59Tenn-71-33

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1Bla						PARTICLE SIZE DISTRIBUTION (in mm.)			(per cent) 3A1			TEXTURAL CLASS
			VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY <0.002	INTERNATIONAL	II 0.2-0.02	III 0.02-0.002	2A2 > 2 (<19mm)		
12698	0-11	Ap	1.6	4.8	4.8	23.8	15.6	38.7	10.7	45.0	23.7	Tr.	1		
12699	11-18	B1	1.2	3.8	3.5	17.2	11.5	44.5	18.3	37.7	28.9	Tr.	1		
12700	18-29	B2	1.4	3.9	4.0	17.0	10.9	42.8	20.0	34.6	29.2	Tr.	1		
12701	29-38	B3	6.0a	6.5a	5.3	19.4	12.3	33.7	16.8	36.3	20.9	8	1		
12702	38-53	Du	9.5a	8.2a	4.6	16.3	13.0	34.8	13.6	36.2	21.5	39	1/fsl		
pH			ORGANIC MATTER			6C1a Free H <sub>2</sub> O 1:1	6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N Fe <sub>2</sub> O <sub>3</sub> %	6C1a Field Ironas Water	BULK DENSITY			4B2	
										4B4 4A1a Water	4B3 4A1c Water	4A1c 4A1h g/cc	4A1h 15-Bar Water g/cc	15-Bar Water %	
12698	7.1			0.64	0.057	11	0.9	17.4	1.61	19.8	1.61	1.62	4.4		
12699	6.9			0.28	0.041	7	1.3						6.4		
12700	5.6			0.18	0.038		1.6	20.5	1.58	20.6	1.59	1.63	7.9		
12701	4.8			0.11			1.5	19.1	1.66	18.0	1.66	1.68	6.2		
12702	4.9			0.09			1.2						4.9		
EXTRACTABLE CATIONS 5Bla			5A1a CATION EXCHANGE CAPACITY NH <sub>4</sub> OAc	6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6R1a H	5C3 Base Sat.% on Sum Cations	5C1 Base Sat.% NH <sub>4</sub> OAc	5Bla Sum Ext. Bases	5A3a Sum Ext. Cations me/100g	6E1a CaCO <sub>3</sub> equiv alent %		
				milliequivalents per 100g soil											
12698	5.3	5.8	0.2	<0.1	0.1	2.7	69	115	6.1	8.8	< 1				
12699	5.7	4.8	0.3	<0.1	0.1	2.9	64	91	5.2	8.1	< 1				
12700	6.7	3.9	0.3	<0.1	0.1	4.6	48	64	4.3	8.9					
12701	6.9	1.3	0.1	<0.1	0.1	6.3	19	22	1.5	7.8					
12702	3.7	1.1	0.1	<0.1	0.1	4.8	21	35	1.3	6.1					

a. Few Fe-Mn<sup>2+</sup> bearing aggregates.

Soil type: Sequatchie loam

Soil No. : S59Tenn-71-33

Location: Putnam County, Tennessee, 3/4 mile southwest of Ditty near bridge over Cane Creek, 100 yards south of paved road. Photo ABW-5N-166.

Vegetation and Use: Orchard grass, red clover, fox tail.

Slope and Land Form: Uneroded 2 percent slope; low young stream terrace.

Drainage and Permeability: Well drained; surface runoff and internal drainage are medium; moderate permeability.

Parent Material: Mixed old alluvium washed from soils underlain by sandstones, shales, and limestones.

Samples Collected by: J. A. Elder, G. T. Jackson, S. R. Bacon, B. C. Cox.

Profile Described by: J. A. Elder, G. T. Jackson. December 9, 1959.

Horizon and

Lincoln

Lab. No. Depth

Ap 12698	0 to 11 inches	Dark brown (10YR3/3) loam with weak medium granular structure; friable; many fine roots; gradual wavy boundary.
-------------	-------------------	---

B1 12699	11 to 18 inches	Strong brown (7.5YR5/6) silt loam with brown (7.5YR4/4) loam streaks along root channels; weak fine subangular blocky structure; friable; common fine roots; gradual wavy boundary.
-------------	--------------------	---

B2 12700	18 to 29 inches	Brown (7.5YR4/4) clay loam with weak medium subangular blocky structure; few discontinuous clay films; friable; few fine roots; gradual wavy boundary.
-------------	--------------------	--

B3 12701	29 to 38 inches	Brown (7.5YR4/4) loam or clay loam with weak medium subangular blocky structure; few thin discontinuous clay films; friable; few fine roots and few small water-rounded gravels; gradual wavy boundary.
-------------	--------------------	---

Bu 12702	38 to 53 inches	Variegated and stratified yellowish brown and dark brown sand and gravel with some silt and clay. Discarded gravel over one inch or so occupied about 50 percent of the volume.
-------------	--------------------	---

Remarks: Colors and consistency are for moist soil.

**soil** Sequoia silt loam

SOIL Nos. 853Tenn-5-9

LOCATION Blount County, Tennessee

**SOIL SURVEY LABORATORY** Beltsville, Maryland

JAR Nos 53728-53731

Soil Type: Sequoia silt loam

Soil No.: S53Tenn-5-9

Location: Blount County, Tennessee. 1-1/2 miles south of Alnwick.

Vegetation and land use: Idle. In process of reclamation. Formerly small shortleaf pine.

Horizon and  
Beltsville  
Lab. No.

Ap 0 to 6 inches. Yellowish brown (10YR 5/4) nonplastic or slightly plastic silt loam.  
53728

B1 6 to 12 inches. Strong brown (7.5YR 5/8) plastic silty clay or silty clay loam; strongly  
53729 developed medium and coarse blocky structural aggregates. Rapid gradation to;

B2 12 to 31 inches. Yellowish red (5YR 5/8) very plastic silty clay; strongly developed coarse  
53730 blocky structure.

C 31 to 42 inches plus. Yellowish red (5YR 5/8) very plastic silty clay soil material mixed with  
53731 soft noncalcareous shale fragments. Shale fragments comprise an estimated 40 percent of the  
total mass. Leached, soft shale bedrock is at a depth of 42 inches.

SOIL Sequoia silt loam

SOIL Nos. 853Tenn-5-10 LOCATION Blount County, Tennessee

SOIL SURVEY LABORATORY Beltsville, Maryland

JAR. Nos. 53732-53734

Soil Type: Sequoia silt loam

Soil No.: 853Tenn-5-10

Location: Blount County, Tennessee. 1 mile north of Clover Hill.

Vegetation and land use: Unimproved pasture. Chiefly weeds and lespedezza. Sparse sprinkling of small Virginia pines.

Horizon and  
Beltsville  
Lab. No.

Ap 0 to 7 inches. Yellowish brown (10YR 5/4) friable silt loam. Rapid gradation to;  
53732

B2 7 to 29 inches. Yellowish red (5YR 5/8) or strong brown (7.5YR 5/8) very firm silty clay;  
53733 strongly developed coarse blocky structure. Gradual gradation to;

C 29 to 45 inches. Yellowish red (5YR 5/8) or strong brown (7.5YR 5/8) very firm silty clay with  
53734 many distinct light yellowish brown (2.5Y 6/4) and light brownish gray (2.5Y 6/2) mottles;  
strongly developed coarse blocky structure. Few very small soft shale fragments. Amount of  
shale fragments increase with depth. Locally, the leached shale bedrock is at 49 inches.

**SOIL SURVEY LABORATORY** Lincoln, Nebr. November 1958

**SOIL TYPE** Silerton **LOCATION** Henderson County, Tennessee  
silt loam

**SOIL NOS.** S55Tenn.39-2 **LAB. NOS.** 7715-7724

Soil type: Silerton silt loam Described by Joseph Winsor, Ralph McCracken,  
 Soil Nos.: 855Tenn-39-2 E. C. Sease, and Robbie Flowers  
 Date: January 26, 1955  
 Area: Henderson County, Tennessee  
 Location: 1.7 miles north of Chesterfield on Browns Creek road, 40 feet  
 west of road, in cotton patch. (See photo No. 2F-112.)  
 Sampling party: Joseph Winsor, Ralph McCracken, E. C. Sease, and Robbie Flowers.  
 Lincoln  
 Lab.

	No. Horizon	Depth	Description
7715	A <sub>p</sub>	0-3½ inches	Brown (10YR 5/3) friable silt loam with weak medium sub-angular blocky structure which breaks down to weak fine granular structure; abrupt boundary.
7716	B <sub>21</sub>	3½-8 inches	Brown to dark brown (7.5YR 4/4) fairly firm silty clay loam; moderate medium subangular blocky structure.
7717	B <sub>22</sub>	8-12½ inches	Brown to dark brown (7.5YR 4/4) on ped surfaces; inside, the ped is yellowish brown (10YR 5/4); moderate medium sub-angular blocky structure; firm silty clay loam.
7718	B <sub>3</sub>	12½-16 inches	Yellowish brown (10YR 5/4) firm silty clay loam with few fine faint mottles of light brownish gray (10YR 6/2); moderate fine to medium angular blocky structure; fairly diffuse boundary.
7719	B <sub>3n</sub>	16-20 inches	Mottled reddish brown (5YR 4/4) and grayish brown (10YR 5/2); mottles are common, medium, distinct. Moderate to strong angular blocky structure; sub peds have a white silt coating; firm compact silty clay loam.
7720	D <sub>1cn</sub>	20-29 inches	Light brownish gray (2.5Y 6/2) firm compact clay with common fine distinct mottles of dark red (10R 3/6); moderate fine and medium angular blocky; common soft irregular shaped limonitic concretions; fairly abundant indurated iron plates up to an inch thick and several inches in width; dusky red color (10R 3/3).
7721	D <sub>2</sub>	29-3½ inches	Mottled reddish brown (2.5YR 4/4) and gray (2.5Y 6/0); mottles are common, medium, distinct; firm clay, sticky and slightly plastic when wet, hard when dry; moderate medium and coarse angular blocky structure. Common soft irregular shaped limonitic concretionary material, strong brown (7.5YR 5/6); very diffuse boundary.
7722	D <sub>3</sub>	3½-4½ inches	Red (10R 4/6) firm clay, sticky and very plastic when wet, very hard when dry; few fine distinct mottles of gray (2.5Y 6/0); a small amount of soft irregular shaped strong brown (7.5YR 5/8) limonitic concretionary material; moderate fine and medium angular blocky structure.
7723	D <sub>4</sub>	4½-60 inches	Light brownish gray (2.5Y 6/2) firm clay, sticky and plastic when wet, hard when dry; common medium distinct red (10R 4/6) mottles; weak medium angular blocky structure; soft abundant large pieces of limonitic concretionary material that is strong brown (7.5YR 5/8). Diffuse and irregular boundary.
7724	D <sub>5</sub>	60-70 inches	Gray (2.5Y 6/0) clay, sticky and plastic when wet, very hard when dry. Reticulate mottling of weak red (10R 4/4). The red mottles are not so common as in the D <sub>4</sub> . A small amount of soft irregular shaped pieces of strong brown (7.5YR 5/8) limonitic material. Near the bottom of the horizon there is light olive brown (2.5Y 5/4) glauconitic sandy clay with fairly numerous small mica flakes. Weak medium and coarse angular blocky structure.
	D <sub>6</sub>	70 plus inches	Consolidated iron cemented sand. Not sampled.

Remarks: Colors given are for moist soil unless otherwise stated. This is the eroded sloping phase of Silerton.

**SOIL SURVEY LABORATORY** Lincoln, Nebr. November 1958

**SOIL TYPE** Silerton silt loam      **LOCATION** Henderson County, Tennessee

SOIL NOS. 855 Tenn-39-5 LAB. NOS. 7740-7750

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent) 3A1							2A2 > 2 mm ( $\frac{1}{2}$ in.)	TEXTURAL CLASS
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY		
		2.1	1.0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002 (< 0.002 mm)
0-4	A <sub>p</sub>	0.4	0.7a	0.8a	7.6a	15.5a	67.6	7.4	57.6	31.0 Tr. sil
4-7	A <sub>3</sub>	0.1	0.4a	0.5a	4.8a	11.2a	70.0	13.0	46.3	38.5 Tr. sil
7-10	B <sub>21</sub>	0.1	0.2a	0.3a	3.6a	8.9a	63.9	23.0	39.0	36.4 - sil
10-16	B <sub>22</sub>	K0.1	0.2a	0.3a	3.5a	9.6a	56.8	29.6	35.9	33.0 - sycl
16-22	C <sub>1</sub>	K0.1	0.2b	0.4a	5.7a	13.5a	53.6	26.6	40.7	30.6 - sil
22-27	D <sub>1m</sub>	0.2b	0.4b	0.5a	7.5a	18.0a	51.7	21.7	46.7	28.5 - sil
27-32	D <sub>2m</sub>	0.2b	0.4b	0.6a	9.0a	24.6a	50.6	14.6	51.0	30.8 Tr. sil
32-38	D <sub>3ml</sub>	0.5b	0.5b	0.7a	9.6a	27.8a	38.0	22.9	51.8	21.1 2 pl
38-45	D <sub>3m2</sub>	0.4b	0.5b	0.5a	8.4a	35.0a	23.8	31.4	49.7	15.7 Tr. scl
45-52	D <sub>4m</sub>	0.5b	0.6b	0.5a	10.3a	40.8a	16.9	30.4	54.5	12.0 Tr. scl
52+	D <sub>5m</sub>	0.7b	0.8b	0.6a	4.1a	35.1a	31.5	27.2	51.2	18.6 Tr. pl
pH		ORGANIC MATTER					6C1a	MOISTURE TENSIONS		
8C1a	1.5	1:10	6A1a	6B1a	Free	CaCO <sub>3</sub> equiv- alent	%	1/10 ATMOS.	1/3 ATMOS.	15 ATMOS.
			ORGANIC-CARBON	NITRO-GEN	C/N	Iron Fe <sub>2</sub> O <sub>3</sub> %				
1.1			%	%			%	%	%	%
6.2			1.00	0.062	16	0.6				
5.7			0.59	0.047	12	0.9				
5.0			0.49	0.044	11	1.9				
4.8			0.40	0.046	9	2.7				
4.7			0.21	0.029		2.6				
4.9			0.11	0.020		2.2				
5.0			0.07			1.8				
4.9			0.06			2.0				
4.8			0.05			2.3				
4.5			0.07			3.0				
4.3			0.06			3.6				
5A1a	EXTRACTABLE CATIONS 5B1a				5C1a	503	5B1a	5A3a	8D3	
CATION EXCHANGE CAPACITY $\text{NH}_4\text{Ac}$	6N2b	6O2b	6H1a	6F2a	6Q2a	BASE SAT. %	Base Sum	5A3a	8D3	
	Ca	Mg	H	No	K	NH <sub>4</sub> Ac EXCH.	Sat. % on Sum	Sum Bases	Cat- ions Ca/Mg	
	milliequivalents per 100g. soil →					5C1a	Cations ≤ 1.00g. →			
4.4	2.9	<0.1	1.6	<0.1	0.3	73	67	3.2	4.8	
4.9	2.6	0.2	2.8	<0.1	0.2	61	52	3.0	5.8	
8.3	2.7	1.1	5.7	<0.1	0.3	49	42	4.1	9.8	2.4
10.8	1.9	2.5	9.8	0.1	0.4	45	33	4.9	14.7	0.8
10.4	0.8	2.6	9.8	0.1	0.3	36	28	3.8	13.6	
8.2	0.1	2.4	6.9	0.1	0.2	34	29	2.8	9.7	
7.7	0.1	2.4	6.5	0.1	0.2	36	30	2.8	9.3	
8.2	0.1	2.9	6.9	0.1	0.2	40	32	3.3	10.2	
8.6	0.1	2.9	7.8	0.1	0.1	37	29	3.2	11.0	
8.6	0.1	1.6	6.9	0.2	0.1	23	22	2.0	8.9	
6.6	<0.1	0.2	6.1	0.2	0.1	8	8	0.5	6.6	
a.	Few	smooth	light	brown	concr.	(Fe-Mn?)				
b.	Many	smooth	and irregular	light brown	concr.	(Fe-Mn?)				

Area: Henderson County, Tennessee

Highway 20 and Rock Hill Road, 150 yards south of Highway 20 and 20 feet east of Rock Hill Road. (See Photo No. 2F-72.)  
Sampling party: E. C. Sense and Robbie Flowers.

Lincoln

Lab.

No. Horizon Depth

7740 A<sub>p</sub> 0-4 inches Light yellowish brown (10YR 6/4) friable silt loam; weak fine granular structure; gradual boundary.

7741 A<sub>3</sub> 4-7 inches Brown (10YR 5/3) friable silt loam; very weak medium subangular blocky structure; abrupt boundary.

7742 B<sub>21</sub> 7-10 inches Strong brown (7.5YR 5/6) firm heavy silt loam; moderate medium subangular blocky; yellowish brown (10YR 5/6) coatings on the blocks; gradual boundary.

7743 B<sub>os</sub> 10-16' Yellowish red (5YR 4/6) to dark brown (7.5YR 4/4) firm silty

inches clay loam; moderate medium subangular blocky structure; gradual boundary.

7744 C<sub>1</sub> 16-22 inches Yellowish red (5YR 4/6) to dark brown (7.5YR 4/4) friable silt loam; moderate to strong medium subangular blocky structure; gradual boundary.

**SOIL SURVEY LABORATORY** Lincoln, Nebr. December 1958

**SOIL TYPE** Talbott silt loam      **LOCATION** Loudon County, Tennessee

SOIL NOS. S58Tenn-53-2 LAB. NOS. 7815-7822

DEPTH INCHES	HORIZON	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)							3A1	2A2	TEXTURAL CLASS
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY	> 2 mm	< 2 mm	
		2.1	1.0-5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002	< 0.001
0-6	Ap	2.9a	3.7a	1.9a	3.6a	2.9a	63.5	21.5	26.7	41.4	Tr. sil
6-10	A3	0.6a	1.5a	1.0a	2.0a	1.6a	49.1	44.2	15.9	35.7	- sic
10-15	B1	0.2a	0.5a	0.4a	0.8a	1.0a	28.1	69.0	7.8	21.7	Tr. c
15-24	B21	0.1a	0.3a	0.2a	0.5a	1.0a	25.3	72.6	7.0	19.6	Tr. c
24-37	B22	0.2a	0.3a	0.2a	0.5a	0.8a	27.0	71.0	7.0	21.1	- c
37-48	B3	0.2a	0.4a	0.3a	0.7a	2.0a	34.5	61.9	10.0	26.9	- c
48-56	C1	0.5a	1.6a	0.8a	1.4a	2.6a	40.4	52.7	14.1	29.7	- sic
56-66	C2	0.4a	1.2a	0.6a	1.3a	3.4a	44.6	48.5	17.0	31.7	Tr. sic
pH		ORGANIC MATTER					MOISTURE TENSIONS				
8C1a		6Ala	6Bla			Free Iron Fe <sub>2</sub> O <sub>3</sub> %					4B2
		1.5	1.10	ORGANIC CARBON	NITRO- GEN	C/N					
				%	%	6C1a					
1:1											
6.5			1.81	0.127	14	2.8					9.0
5.0			0.27	0.031	9	4.4					16.4
4.9			0.17	0.030		6.9					25.9
5.0			0.13	0.036		7.7					28.5
4.8			0.13			7.8					28.2
4.8			0.13			7.1					26.5
4.8			0.12			6.5					24.3
4.8			0.03			6.2					23.4
5A1a		EXTRACTABLE CATIONS					5B1a	5B1a	5A3a	8D3	
CATION EXCHANGE CAPACITY NH <sub>4</sub> Ac		6K2b	6D2b	6H1a	6P2a	6O2a	BASE SAT. %	Base Sum Sat.%	Sum Ext. Bases	Ext. Cations me/100g	
		Ca	Mg	H	No	K	NH <sub>4</sub> Ac EXCH.	on Sum Cations	Cations	Ca/Mg	
		milliequivalents per 100g. soil					5C1				
11.3		8.1	1.1	5.9	<0.1	0.4	85	62	9.6	15.5	7.4
13.0		5.1	1.6	11.5	<0.1	0.4	55	38	7.1	18.6	3.2
25.1		8.0	2.6	17.8	<0.1	0.5	44	38	11.1	28.9	3.1
28.3		5.9	2.2	31.9	0.1	0.6	31	22	8.8	40.7	2.7
30.0		3.3	1.6	33.9	<0.1	0.4	18	14	5.3	39.2	2.1
25.2		1.7	0.8	31.4	<0.1	0.4	12	8	2.9	34.3	
25.3		1.4	0.8	28.5	<0.1	0.3	10	8	2.5	31.0	
24.2		1.8	0.8	26.6	<0.1	0.3	12	10	2.9	29.5	

Soil type: Talbott silt loam  
 Soil Nos. : 558Tenn-53-2  
 Location: Loudon County, Tennessee; 600 feet north-northwest from Forked Creek Baptist Church at the edge of a second growth woodlot next to a pasture; elevation about 850 feet. (Field Sheet ANU-IL-5).  
 Topography: The sampling site is on a slightly concave 3 percent south slope; the slope steepens to 10 percent about 60 feet north and 40 feet west of the sampling site.  
 Physiography: Residual; argillaceous limestone.  
 Vegetation: Second growth of oak and poplar; the trees are about 30 to 50 years old; the canopy is open with an almost continuous grass cover on the ground. Part of the area is used for tobacco seed beds.  
 Sampled by: L. T. Alexander, Joe A. Elder, R. H. Jordan, and Klaus W. Flach, April 8, 1958.  
 Described by: Klaus W. Flach.

Horizon and  
 Lincoln  
 Lab. Number

Ap 7815	0 to 6 inches. Dark brown (10YR 3/3) silt loam; moderate fine and very fine granular structure; very friable; abrupt and smooth boundary.
A3 7816	6 to 10 inches. Dark brown to strong brown (7.5YR 4/4 to 7.5YR 5/6) silt loam with common fine manganese concretions; weak to moderate medium and fine subangular blocky structure; very friable; clear and smooth boundary. In places Al material is mixed with this horizon.
B1 7817	10 to 15 inches. Dark brown to strong brown (7.5YR 4/4 to 7.5YR 5/6) silty clay; moderate medium and fine blocky structure with clay flow surfaces on all ped faces; gradual and smooth boundary. Manganese concretions are common but less frequent than in the A3 horizon.
B2 7818	15 to 24 inches. Yellowish red (5YR 5/6) on ped faces variegated with red (2.5YR 4/6) and yellowish brown (10YR 5/4) in the interiors of ped; clay; strong medium blocky structure; clay flow on all ped faces; friable; sticky; gradual and smooth boundary.
B2 7819	24 to 37 inches. Yellowish red (5YR 5/6) on ped faces variegated with red (2.5YR 4/6) and yellowish brown (10YR 5/4) in the interiors of ped; clay; moderate to strong medium blocky structure compounded to weak medium prismatic structure; friable; sticky; gradual and smooth boundary.
B3 7820	37 to 48 inches. Variegated red and strong brown (2.5YR 4/6 and 7.5YR 5/6) silty clay; weak to medium prismatic structure; friable; gradual and smooth boundary.

brown ones; friable; gradual and smooth boundary.

C1 7821	48 to 56 inches. Variegated yellowish red and strong brown (5YR 5/6 and 7.5YR 5/6) silty clay with few fine and distinct yellowish brown (10YR 5/5 and 10YR 5/4) mottles; weak medium prismatic structure; friable; gradual and smooth boundary.
C2 7822	56 to 66 inches. Variegated yellowish red and strong brown (5YR 5/6 and 7.5YR 5/6) silty clay; weak medium and coarse platy structure; ped standing on edge in conformance to the structure of the material; friable.

**SOIL SURVEY LABORATORY** Lincoln, Nebr. December 1958

**SOIL TYPE** Talbott      **LOCATION** Loudon County, Tennessee

silt loam

**SOIL NOS.** . . . . . 558Tenn-53-5      **LAB. NOS.** . . . . . 7837-7843

DEPTH INCHES	HORIZON	1 BBL.	PARTICLE-SIZE DISTRIBUTION (in mm.) (per cent)						SAT	2A2	TEXTURAL CLASS
		VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY			
4.5		100	0	0	0	0	0	0	> 2		

Soil type: Talbott silt loam

Soil Nos. : 58Tenn-53-5

Location: Loudon County, Tennessee; 1.5 miles east of Centerville store, south of Big Hill Road; elevation about 920 feet. (Field Sheet ANU-II-47.)

Topography: The sampling site is on a 2- to 3-percent south slope on the crest of a divide between two drainage ways; at the site the gently sloping area is about 150 feet wide, terminated by steeper slopes toward the drainage ways.

Physiography: Residual, from argillaceous limestone.

Vegetation: The area is presently in pasture which consists almost exclusively of grasses.

Sampled by: L. T. Alexander, R. H. Jordan, Joe A. Elder, and Klaus W. Flach, April 9, 1958.

Described by: Klaus W. Flach.

Horizon and

Lincoln

Lab. Number

Ap 0 to 6 inches. Brown to dark brown (7.5YR 4/4) silty clay loam; moderate fine granular structure; very friable; abrupt and smooth boundary.

B1 6 to 10 inches reddish brown (5YR 4/4) heavy silt loam with medium texture (0.5cm 1/2 to 1cm 1/2)

**SOIL SURVEY LABORATORY** ..... Lincoln, Nebr. .... December 1958.....

**SOIL TYPE** ..... Tellico ..... **LOCATION** ..... Loudon County, Tennessee.....  
loam

**SOIL NOS.** ..... S58Tenn-53-3 ..... **LAB. NOS.** ..... 7823-7828.....

Soil type: Tellico loam  
Soil Nos. : S59Tenn-53-3  
Location: Loudon County, Tennessee; two miles south-southeast of Centerville Store, 1/2 mile south of the top of Alexander Knob; elevation about 1060 feet. (Field Sheet ANU-IL-45.)  
Topography: The sampling site is in the upper quarter of a 40 percent south slope; slope is about 500 feet long and becomes somewhat less steep above the sampling site.  
Physiography: Residual material from calcareous sandstone.  
Vegetation: Red oak is dominant with some white oak; some of the trees are estimated to be between 60 and 100 years old but the stand has been selectively cut since and most trees are not more than 20 years old; site has never been plowed and shows no evidence of erosion.  
Sampled by: L. T. Alexander, Joe A. Elder, R. H. Jordan, and Klaus W. Flach, April 8, 1958.  
Described by: Klaus W. Flach.

Horizon and  
Lincoln  
Lab. Number

O1 1 to 0 inch. Black (5YR 2/1) matted material consisting of partly decomposed organic material with many conspicuous worm casts about .5 mm. in diameter at the contact with the Al horizon; not sampled.

Al 7823 0 to 7 inches. Dark reddish brown to dusky red (2.5YR 3/4 to 10R 3/4) loam; moderate fine granular structure; loose; clear and smooth boundary; there is an abundance of white fungus hyphae.

AB 7824 7 to 12 inches. Dusky red (10R 3/3 to 3/4) heavy silt loam to silty clay loam; weak fine subangular blocky structure that breaks readily to weak to moderate medium and fine granular structure; friable; gradual and wavy boundary; hyphae not as common as in Al horizon.

B2 7825 12 to 22 inches. Dusky red to dark reddish brown (10R 3/4 to 2.5YR 3/4) silty clay loam; weak to moderate medium and fine subangular blocky structure with weakly developed clay flow surfaces on ped faces; friable; gradual and smooth boundary.

B2 7826 22 to 37 inches. Dark reddish brown to dusky red (2.5YR 3/4 to 10R 3/4) silty clay loam; weak to moderate medium and fine subangular blocky structure; pedes are coated by weak and very thin clay flow surfaces; friable; gradual and smooth boundary.

B3 7827 37 to 54 inches. Dusky red (10R 3/4) silty clay loam; weak medium prismatic or coarse subangular blocky structure with some very clear fine horizontal and vertical boundaries.

**SOIL SURVEY LABORATORY** Lincoln, Nebr. December 1958

**SOIL TYPE** ~~Molliso~~

**LOCATION** Loudon County, Tennessee

Loam

SOIL NOS.

S58Tenn-53-4

LAB. NOS. 7829-7836

DEPTH INCHES	HORIZON	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1										TEXTURAL CLASS
		2.1	1.0-5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.02	< 0.002	0.2-0.02	0.02-0.002	> 2 (< 0.002 mm)	
0-5	A1	2.0a	3.8a	9.7b	21.1b	5.3b	36.0	22.1	23.1	27.2	Tr.	1
5-9	AB1	0.3a	1.8a	7.9b	18.6b	7.6b	34.7	29.1	22.2	26.7	Tr.	c1
9-16	AB2	1.1a	1.8a	6.4b	16.7b	5.0b	30.2	38.8	19.7	22.6	Tr.	c1
16-22	B1	1.0a	1.6a	5.9b	17.2b	4.4b	26.1	43.8	19.4	18.4	Tr.	c
22-30	B21	0.6a	1.7a	6.2b	17.0b	5.6b	24.7	44.2	18.4	18.3	Tr.	c
30-40	B22	0.9a	2.1a	7.8b	17.9b	7.6b	22.1	41.6	19.2	16.5	Tr.	c
40-52	B3	0.4a	2.6a	8.8b	17.4b	8.5b	19.7	42.6	19.3	14.3	Tr.	c
52-67	C1	2.3a	3.4a	8.1b	18.4b	6.4b	22.6	38.8	19.8	16.8	Tr.	c1
pH		ORGANIC MATTER				Free Iron Fe <sub>2</sub> O <sub>3</sub> %	MOISTURE TENSIONS			4B2		
8C1a		6Ala	6B1a	6B1a	NITRO- GEN	C/N	CoCO <sub>3</sub> equiva- lent			1/10 ATMOS.	1/3 ATMOS.	15 ATMOS.
1.1		1.5	1:10	ORGANIC CARBON	%	%	6C1a	%	%	%	%	%
5.8				3.36	0.207	16	6.3					11.5
5.0				0.92	0.084	11	7.7					12.1
4.8				0.44	0.057	8	9.1					14.6
4.8				0.21	0.046		11.4					16.2
4.9				0.13	0.038		12.6					16.5
4.8				0.12			14.7					16.8
4.9				0.07			16.1					18.1
4.9				0.04			15.5					17.8
5Ala		EXTRACTABLE CATIONS				5B1a	5C3	5B1a	5A3a	8D3		
CATION EXCHANGE CAPACITY NH <sub>4</sub> Ac		6N2b	6O2b	6H1a	6P2a	6Q2a	BASE SAT. %	Base Sum Ext. on Sum	5A3a	8D3		
		Ca	Mg	H	Na	K	NH <sub>4</sub> Ac EXCH.	Ext. on Sum	Bases Cations me/100g	Ca/Mg		
		milliequivalents per 100g. soil					5C1	Cations				
12.8	4.2	1.9	11.0	<0.1	0.6	52	38	6.7	17.7	2.2		
8.5	0.5	0.6	11.4	<0.1	0.3	16	11	1.4	12.8			
9.1	0.2	0.9	11.0	<0.1	0.4	16	12	1.5	12.5			
10.3	0.1	1.1	11.5	<0.1	0.3	14	12	1.5	13.0			
9.8	0.1	0.7	11.0	<0.1	0.2	9	8	0.9	11.9			
9.5	0.1	0.8	11.9	<0.1	0.2	10	8	1.0	12.9			
9.5	0.1	0.6	11.9	<0.1	0.2	8	6	0.8	12.7			
10.0	0.1	0.7	11.9	<0.1	0.2	10	8	1.0	12.9			

Soil type: Tellico loam

Soil No.: 550Tenn-53-4

Location: Loudon County, Tennessee; three miles north of Greenback; elevation about 1060 feet. (Field Sheet ANU-IL-45.)

Topography: The sampling site is in the upper quarter of a long steep north slope which is slightly convex. Above and at the sampling site the slope gradient is about 30 percent but it becomes 50 percent about 20 feet below the sampling site.

Physiography: Residual material from calcareous sandstone.

Vegetation: Second growth forest, predominantly consisting of red oak; some trees 80 to 100 years old.

Sampled by: L. T. Alexander, Joe A. Elder, R. H. Jordan, and Klaus W. Flach, April 9, 1958.

Described by: Klaus W. Flach.

Horizon and

Lincoln

Lab. Number

O1 1 to 0 inch. Black (5YR 2/1) soil material with strong very fine granular structure mixed with partly decomposed leaves, twigs and seeds with numerous distinct worm casts in the lower part of the horizon.

A1 0 to 5 inches. Dark reddish brown (2.5YR 3/4) loam; moderate medium and fine granules compounded to weak fine subangular blocky structure; loose; many roots; gradual and smooth boundary.

AB1 5 to 9 inches. Dark reddish brown (2.5YR 3/4) silt loam; moderate fine granules compounded to very weak fine subangular blocky structure; loose; gradual and smooth boundary.

AB2 9 to 16 inches. Dusky red to dark red (10R 3/4 to 2.5YR 3/6) silty clay loam to silt loam; moderate fine granules compounded to very weak fine subangular blocky structure; loose; gradual and smooth boundary.

B1 16 to 22 inches. Dusky red to dark red (10R 3/4 to 2.5YR 3/6) silty clay loam; weak fine subangular blocky structure breaking readily into moderate fine and very fine granules; loose; gradual and wavy boundary.

B2 22 to 30 inches. Dusky red to dark red (10R 3/4 to 2.5YR 3/6) silty clay loam; weak to moderate fine subangular blocky structure breaking readily into weak fine granules; very friable to loose; gradual and smooth boundary; very weak and discontinuous clay skins.

B2 30 to 40 inches. Dark red (10R 3/6 to 2.5YR 3/6) silty clay loam; weak to moderate medium and fine subangular blocky structure, almost continuous but weak clay skins; ped break to weak fine granules; friable; gradual and smooth boundary; in part of the excavation the lower part of this horizon contains shale fragments.

B3 40 to 52 inches. Dark red (2.5YR 3/6) silty clay loam to silty clay; very weak fine prismatic to weak to moderate fine and medium subangular blocky structure; friable; gradual and smooth boundary; this horizon contains weak and discontinuous clay skins and a few highly weathered magnetic sandstone fragments.

C1 52 to 67 inches. Dark red (2.5YR 3/6) silty clay loam to silty clay; weak fine prismatic to weak medium subangular blocky structure; friable to firm; distinct, thin clay flow surfaces on some ped faces and few and fine reddish yellow (7.5YR 6/6) shale fragments which are about 2-mm. wide and 1/2- to 2-cm. long; sandstone fragments as in the B3.

## **SOIL SURVEY LABORATORY**

Lincoln, Nebr.

October 1963

**SOIL TYPE**

Tunica  
silty clay

**LOCATION** Dyer County, Tennessee

**SOIL NOS.**

861Tenn-23-10

LAB. NOS. 16437-16445

Soil type: Tunica silty clay  
 Soil Nos. : SS1Tenn-23-10  
 Location: Dyer County, Tennessee; on Midway road 80 feet west of Obion River bridge at driveway - north by house site on field road 0.4 mile to drainage ditch - on field road along drainage ditch 0.1 mile - south of field road 15 feet to sample site. Aerial photo ADN-3R-154.  
 Vegetation and use: Soybeans.  
 Slope and land form: Level to slightly depressional Mississippi River and Obion River flood plain. Possibly a former channel of Obion River.  
 Drainage and permeability: Somewhat poorly drained with slow runoff and slow internal drainage; permeability is slow.  
 Parent material: Alluvium from Mississippi River.  
 Collected by: E. J. Pedersen, J. L. Millet, J. A. Elder, E. C. Sease, W. C. Moffitt, C. L. Moore, and W. C. Jackson.  
 Described by: W. T. Brown, October 17, 1961.

Horizon and  
 Lincoln  
 Lab. Number

Ap 16437	0 to 5 inches. Very dark grayish brown (10YR 3/2) silty clay; moderate fine granular structure; friable (lower two inches is massive firm plow pan); common fine and medium roots; abrupt smooth boundary.
E21 or C1 16438	5 to 19 inches. Dark gray (5Y 4/1) clay or silty clay with common medium faint brown (10YR 4/3) mottles; moderate coarse prismatic structure breaking to moderate medium subangular blocky structure; firm; common fine and medium roots mostly in ped interstices; common coatings, possibly clay films, on vertical ped faces; common crayfish holes two inches in diameter; clear smooth boundary.
E22 or C2 16439	19 to 25 inches. Gray (5Y 5/1) silty clay or clay with common fine distinct brown (10YR 4/3) and gray (N 5/) mottles; moderate coarse prismatic structure breaking to moderate medium subangular blocky structure; firm; common fine roots mostly in ped interstices; common fine pores; common coatings, possibly clay films, on vertical ped faces; common crayfish holes two inches in diameter; abrupt smooth boundary.
D11 16440	25 to 32 inches. Dark grayish brown (10YR 4/2) fine sandy loam with few medium faint yellowish brown (10YR 5/4) mottles; massive; friable; common fine roots; one bulb-shaped crayfish bed three inches in diameter; abrupt smooth boundary.
D22 16441	32 to 44 inches. Yellowish brown (10YR 5/4) fine sandy loam with clod coatings of gray (N 5/); massive; friable; calcareous, effervesces slightly with HCl; 1/2-inch gray clay layer at 38 inches; abrupt smooth boundary.
D33 16442	44 to 46 inches. Dark gray (N 4/) to gray (N 5/) clay with few fine distinct yellowish brown (10YR 5/4) mottles; massive; firm; calcareous, effervesces slightly with HCl; common calcium concretions; abrupt smooth boundary.
D44 16443	46 to 52 inches. Dark gray (N 4/) silt loam or loam with many coarse distinct dark yellowish brown (10YR 4/4) and black (N 2/) mottles; massive; friable; calcareous, effervesces slightly with HCl; abrupt smooth boundary.
D55 16444	52 to 55 inches. Gray (N 5/) to dark gray (N 4/) clay; massive; firm; few tree roots; calcareous, effervesces violently with HCl; many calcium concretions; abrupt smooth boundary.
D66 16445	55 to 65 inches. Gray (10YR 5/1) clay or silty clay with common coarse distinct black (N 2/) and reddish brown (5YR 4/4) mottles; massive; firm; few medium tree roots; few fine pores and root or worm holes; calcareous, effervesces slightly with HCl; common calcium concretions.

Clay mineralogy as follows: (Methods 7A2, 7A3)

(By Beltsville Laboratory)

Horizon	'Montmorillonite'	'Chlorite'	'Vermiculite'	'Mica'	Interstratified' layer			'% Kaolinite'	'% Gibbsite'
					Silicates	Quartz'	(by DTA)		
E21	xxxx	-	x	x	-	-	-	10	-
E22-C2	xxxx	-	x	x	-	-	-	10	-

dash, not detected; x, small; xxxx, dominant.

Remarks: Ap, E21 and D11 sampled for Bureau of Public Roads. Colors and Munsell notations are for moist soil; soil was dry when sampled. All soil samples were fumigated with methyl bromide for 24 hours.

**SOIL SURVEY LABORATORY** Lincoln, Nebr. **October 1963**

**OIL TYPE** Tunica **LOCATION** Dyer County, Tennessee  
silty clay

**SOIL NOS.** S61Tenn-23-11 **LAB. NOS.** 16446-16453

DEPTH INCHES	HORIZON	1B1a	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1										2A2	TEXTURAL CLASS
			VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY	< 0.002	0.2-0.02	0.02-0.002		
0-7	Ap	-	-	0.2a	0.4a	0.3a	43.2	55.9	4.9	38.8	-	-	-	-
7-25	B2 or C	-	-	0.2a	2.1a	3.2a	45.7	48.8	12.3	38.3	-	-	-	-
25-29	Dul	-	0.3	2.3	59.1	12.5	17.4	8.4	57.3	4.7	-	-	-	-
29-38	Du2	-	0.4	8.2	51.3	22.7	13.5	3.9	60.4	3.7	-	-	-	-
38-40	Du3	Tr.	0.2	2.7	24.3	42.5	22.6	7.7	77.1	4.3	-	-	-	-
40-55	Du4	Tr.	0.2	1.6	45.5	33.7	15.9	3.1	78.9	4.3	-	-	-	-

Soil type: Tunica silty clay  
 Soil Nos.: 861Tenn-23-11

Location: Dyer County, Tennessee; on Midway road 0.2 mile west of main levee - south by house site on field road 0.7 mile - 20 feet east of field road to sample site in soybean field. Aerial photo ADN-3R-170.

Vegetation and use: Soybeans.

Climate and land forms: Warm Mississippi River flood plain

slow.

Parent material: Alluvium from Mississippi River.

Collected by: E. J. Pedersen, J. L. Millet, J. A. Elder, E. C. Sease, W. C. Moffitt, C. L. Moore, and W. C. Jackson.  
 Described by: W. T. Brown, October 17, 1961.

Horizon and  
 Lincoln  
 Lab. Number

Ap 16446	0 to 7 inches. Very dark grayish brown (10YR 3/2) silty clay; 0 to 4 inches moderate medium granular structure, friable; 4 to 7 inches massive, firm to very firm plow pan; many fine roots; clear smooth boundary.
B2 or C 16447	7 to 25 inches. Very dark grayish brown (10YR 3/2) silty clay with few fine distinct yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) mottles; moderate medium prismatic structure breaking to moderate medium subangular blocky structure; firm; few fine roots; thin clay films on vertical ped faces; abrupt smooth boundary.
Du1 16448	25 to 29 inches. Dark grayish brown (10YR 4/2) fine sandy loam; massive; friable; clear smooth boundary.
Du2 16449	29 to 38 inches. Pale brown (10YR 6/3) fine sand; single grain; loose; abrupt smooth boundary.
Du3 16450	38 to 40 inches. Dark grayish brown (10YR 4/2) fine sandy loam with common medium distinct yellowish brown (10YR 5/6) mottles; massive; very friable; abrupt smooth boundary.
Du4 16451	40 to 55 inches. Pale brown (10YR 6/3) fine sand; single grain; loose; clear wavy boundary.
Du5 16452	55 to 72 inches. Pale brown (10YR 6/3) fine sand or loamy fine sand with common medium faint yellowish brown (10YR 5/4) mottles; single grain; loose; abrupt smooth boundary.
Du6 16453	72 to 86 inches. Dark gray (10YR 4/1) silty clay loam with many coarse prominent dark reddish brown (5YR 3/4) and dark grayish brown (10YR 4/2) mottles; massive; firm; many fine pores; abrupt smooth boundary.
Du7	86 to 114 inches. (Bucket auger examination.) Dark grayish brown (10YR 4/2) loam or fine sandy loam with many medium faint grayish brown (10YR 5/2) mottles; friable.

OIL SURVEY LABORATORY Lincoln, Nebr. December 1958

SOIL TYPE Waynesboro LOCATION Loudon County, Tennessee  
1 loam

SOIL NOS. S58Tenn-53-6 LAB. NOS. 784-7852

DEPTH INCHES	HORIZON	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)							3A1	2A2	TEXTURAL CLASS	
		1B1a 2.1	COARSE SAND 1-0.5	COARSE SAND 0.5-0.25	MEDIUM SAND 0.25-0.10	FINE SAND 0.10-0.05	VERY FINE SAND 0.05-0.002	SILT < 0.002	CLAY 0.2-0.02	2A2 0.02-0.002 < 0.002		
0-2	A1	4.3a	7.8a	7.0a	17.0a	11.6a	42.2	10.1	34.1	28.7	4	1
2-6	A2	2.9a	6.5a	6.6a	14.1a	13.4a	44.6	11.9	34.6	30.2	2	1
6-10	A3	1.9a	5.9a	6.5a	16.0a	10.9a	44.7	14.1	33.9	30.5	2	1
10-16	B1	2.4a	4.6a	4.7a	12.0a	7.8a	38.9	29.6	26.1	27.2	Tr.	c1
16-22	B21	1.6a	3.8a	4.1a	10.0a	6.8a	30.4	43.3	21.1	21.7	Tr.	c
22-27	B22	1.2a	3.3a	3.6a	9.5a	6.5a	23.7	52.2	19.1	16.4	Tr.	c

Soil type: Waynesboro loam  
 Soil No.: 561ann-53-6  
 Location: Loudon County, Tennessee; two miles northwest of Loudon on the north side of the Tennessee River; elevation about 860 feet. (Field Sheet ANU-IL-106)  
 Topography: The sampling site is on a small level, but slightly concave, area between two drainage ways.  
 Physiography: An old terrace of the Tennessee River.  
 Vegetation: A well preserved second growth forest consisting dominantly of oak and poplar; some of the trees are at least 100 years old. There is a loose open understory of trees of the above species with a mixture of about 10 percent juniper trees.  
 Sampled by: R. H. Jordan and Klaus W. Flach, April 9, 1958.  
 Described by: Klaus W. Flach.

Horizon and  
 Lincoln  
 Lab. Number

O1	1 to 0 inch. Black (5YR 2/1) partly decomposed organic material with many worm and mite casts.
A1 7844	0 to 2 inches. Black (10YR 2/1) loam; moderate fine and very fine granular structure; loose; abrupt and wavy boundary. Not sampled: A gray (5Y 5/1) micro-podzol A2 horizon with weak fine granular structure in places; in its best expression this horizon is about 1/2-inch thick.
A2 7845	2 to 6 inches. Brown (10YR 5/3) loam with common residues of A1 material mixed into the upper part of the horizon; weak medium platy structure; loose; gradual and smooth boundary.
A3 7846	6 to 10 inches. Brown (7.5YR 5/2 to 5/4) and yellowish red (5YR 5/6) loam; weak fine and medium subangular blocky structure; breaks readily into weak moderate fine granules; very friable; clear and smooth boundary.
B1 7847	10 to 16 inches. Red (2.5YR 4/6) silty clay loam variegated with few medium and fine brown to brown (7.5YR 5/3) mottles; weak fine and medium subangular blocky structure; friable; gradual and smooth boundary.
B21 7848	16 to 22 inches. Red to dark red (10R 4/6 to 3/6) silty clay loam or silty clay; weak to moderate fine subangular blocky structure; friable; gradual and smooth lower boundary.
B22 7849	22 to 27 inches. Dark red (10R 3/6) silty clay loam; weak to moderate fine and medium subangular blocky structure; ped faces have few discontinuous clay skins; friable; clear and smooth boundary.
B23 7850	27 to 33 inches. Dark red (10R 3/6) silty clay; angular blocky structure of no definite size preference; pedas can be removed from the soil in large blocks that break easily into well defined fine angular blocks with continuous clay skins on cleavage faces; only slightly firm when removed; gradual and smooth boundary.
B3 7851	33 to 47 inches. Dusky red (10R 3/3) silty clay; angular blocky structure of no definite size preference; pedas have weak clay skins; firm, not as firm as the B23 material; gradual and smooth boundary.
C1 7852	47 to 55 inches. Dark red (10R 3/6) silty clay with a few yellowish brown (10YR 5/4) shale fragments which are about 5-mm. wide and 10- to 15-mm. long; weak medium prisms breaking into ill-defined weak medium and fine blocky structure; pedas have weak clay skins in places; firm, somewhat less firm than the overlying horizons.

Remarks: Large roots penetrate to the top of the B23 horizon where they stop abruptly; below that depth there are only very few and very fine root hairs throughout the B23 horizon. Well rounded water-worn washed quartz pebbles and equally rounded strongly weathered sandstone pebbles of about 2 to 4 inches in diameter occur dominantly in the B3 horizon where they occupy about 5 percent of the soil mass. A few pebbles occur in the upper horizon and again are somewhat more numerous at the surface. No distinct stone line was observed.



Soil type: Waynesboro loam

Soil Nos. : SS81enn-53-9

Location: Loudon County, Tennessee; one mile southwest of Axley Chapel; elevation about 1020 feet. (Field Sheet ANU-II.)

Topography: The site is on a small level area which is terminated by drainage channels; level area extends from 50 to 300 feet from the sampling site and is terminated by a 14-percent slope; the level area is about 16 feet above the sole of the drainage channel.

Physiography: Old high terrace of the Tennessee River.

[Redacted] [Redacted] [Redacted] [Redacted] [Redacted] [Redacted] [Redacted] [Redacted]

Described by: Klaus W. Flach.

Horizon and  
Lincoln  
Lab. Number

O1	$\frac{1}{2}$ to 0 inch. Black, partly decomposed litter; numerous earthworms and mite droppings.
A1 7860	0 to 2 inches. Dark grayish brown to dark gray (10YR 4/2 to 4/1) loam; moderate fine granular structure; loose; clear and smooth boundary.
A2 7861	2 to 7 inches. Dark brown to brown (7.5YR 4/2) loam with common admixtures or reddish brown (>YR 4/4); weak fine granular structure; friable; clear and smooth boundary.
A3 7862	7 to 15 inches. Yellowish red to red (5YR 4/6 to 2.5YR 4/6) heavy silt loam; weak fine and medium subangular blocky structure; friable; gradual and smooth boundary.
B1 7863	15 to 21 inches. Dark red (2.5YR 3/6) silty clay loam; weak moderate fine and medium subangular blocky structure; friable; gradual and smooth boundary.
B2 7864	21 to 31 inches. Dark red (10R 3/6) silty clay loam; weak to medium fine and medium subangular blocky structure; very few and very weak discontinuous clay skins; friable; clear and smooth boundary.
B2 7865	31 to 42 inches. Dark red (10R 3/6) silty clay; weak to moderate fine angular blocky structure; continuous moderate clay skins on peds; firm, slightly firm when removed; gradual and smooth boundary.
B3 7866	42 to 53 inches. Dark red (10R 3/6) clay loam; very weak medium blocky structure; distinct discontinuous clay skins on peds; firm; gradual and smooth boundary.

**SOIL SURVEY LABORATORY**  
Lincoln, Nebraska

LOCATION Putnam County, Tennessee

SOIL TYPE Wellston silt loam

LAB NOS. 12551 - 12558

SOIL NOS. S59Tenn-71-23

LABORATORY NUMBER	DEPTH INCHES	HORIZON	PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)						3A1			TEXTURAL CLASS	
			VERY COARSE SAND 2.1	COARSE SAND 1.0-5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY <0.002	INTERNATIONAL II 0.2-0.02	III 0.02-0.002	> 2 (<19 mm.)	
12551	0-2	A1	2.1a	0.8a	1.2a	8.6	8.1	64.7	14.5	35.2	43.2	6	sil
12552	2-7	A2	1.4a	0.6a	0.9	6.5	6.4	61.5	22.7	29.8	42.3	10	sil
12553	7-12	B1	1.3a	0.5a	0.6	4.4	5.0	54.2	34.0	23.5	38.6	9	sicl
12554	12-18	B21	1.0a	0.2a	0.4	3.0	3.4	45.3	46.7	17.6	33.1	6	sic
12555	18-25	B22	0.3a	0.2a	0.3	2.0	2.3	40.5	54.4	13.5	30.7	9	sic/c
12556	25-29	B3	0.8a	0.2a	0.2	1.5	2.0	41.1	54.2	12.8	31.4	8	sic
12557	29-39	C1	0.9a	0.2a	0.2b	1.4	2.1	45.2	50.0	13.3	35.0	7	sic
12558	39-45	C2	4.0a	0.5a	0.3b	0.9	1.8	45.8	46.7	11.8	36.4	9	sic
	pH			ORGANIC MATTER			6C1a Free H <sub>2</sub> O 1:1	6C1a Ironas Fe <sub>2</sub> O <sub>3</sub>	BULK DENSITY			4B2 15-Bar Water %	
	8C1a H <sub>2</sub> O 1:1			6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N	Field %	State %	30-Cm. g/cc	0.D. g/cc	4Alh g/cc		
12551	4.6			3.90	0.147	26	2.4	28.2	1.27	22.1	1.31	1.33	7.5
12552	4.8			0.90	0.056	16	2.6	24.4	1.37c	22.0	1.38c	1.42c	9.1
12553	4.7			0.53	0.036	15	3.5	23.8	1.46	21.4	1.49	1.55	14.8
12554	4.8			0.30	0.030	10	4.3	25.8	1.45	25.2	1.46	1.55	20.4
12555	5.0			0.23	0.032		4.9	26.7	1.47			1.55	24.9
12556	5.0			0.18			5.3	29.9	1.43			1.52	24.9
12557	5.0			0.17			5.6	26.1	1.50c			1.58	23.0
12558	4.9			0.21			6.6	23.0	1.57c			1.66	21.8
	5A1a CATION EXCHANGE CAPACITY NH <sub>4</sub> OAc	EXTRACTABLE CATIONS 5B1a						5C1 Base Sat.% on Sum Cations	5C1 Base Sat.% NH <sub>4</sub> OAc Bases	5B1a Sum Ext. Cations me/100g	5A3a Sum Ext. Cations me/100g		
		6N2b Ca	6O2b Mg	6P2a Na	6Q2a K	6H1a H	milliequivalents per 100g soil						
12551	10.7	0.6	0.4	<0.1	0.2	16.0	7	11	1.2	17.2			
12552	7.0	0.2	0.1	0.1	0.1	9.7	5	7	0.5	10.2			
12553	9.9	0.2	0.2	0.1	0.1	13.4	4	6	0.6	14.0			
12554	12.7	<0.1	0.1	<0.1	0.1	17.2	1	2	0.2	17.4			
12555	16.3	<0.1	0.2	0.1	0.1	21.0	2	2	0.4	21.4			
12556	17.5	0.1	0.2	0.1	0.2	21.0	3	3	0.6	21.6			
12557	14.2	0.1	0.1	0.1	0.1	20.4	2	3	0.4	20.8			
12558	15.1	<0.1	0.1	0.1	0.2	20.0	2	3	0.4	20.4			

- a. Many Fe-Mn? bearing aggregates.
- b. Few Fe-Mn? bearing aggregates.
- c. Range is 0.12 to 0.16 g/cc.

Soil type: Wellston silt loam

Soil Nos. : 869Tenn-71-23

Location: Putnam County, Tennessee. Two miles northwest of Monterey on Livingston Highway. 1/4 mile southeast of Woodliff Church. 110 yards south of Highway. Neal farm. Photo AEW-6N-51

Slope and Land Form: Four percent; uneroded upland ridge top.

Drainage and Permeability: Well drained, surface runoff is moderate to rapid; internal drainage is moderate.

Parent Material: Siltstone and shale from Pennsylvanian System of Cumberland Plateau.

Samples Collected by: Edwood Pederson, G. T. Jackson, J. A. Elder, D. K. Springer, J. Fleming - December 1, 1959.

Profile Described by: G. T. Jackson, December 1, 1959.

Horizon and  
Lincoln  
Lab. No. Depth

Ao	$\frac{1}{2}$ to $\frac{1}{2}$	Loose, undecomposed broadleaf litter; principally oak.
Not sampled	inch	

Ac	$\frac{1}{2}$ to 0	Partly decomposed broadleaf litter and twigs.
Not sampled	inch	

A1	0 to 2	Dark grayish brown (10YR5/2) silt loam with weak fine granular structure; very friable; many fine roots; abrupt wavy boundary.
12551	inches	

A2	2 to 7	Yellowish brown (10YR5/6-5/4) silt loam with moderate medium granular structure; very friable; numerous roots and pores; boundary clear, smooth.
12552	inches	

R1	7 to 12	Yellowish brown (10YR5/6) fine silt loam with fine subangular blocky structure common discontinuous clay films; friable; roots numerous; clear smooth boundary.
12553	inches	

R21	12 to 18	Yellowish brown (10YR5/6) silty clay loam with weak medium and fine subangular blocky structure; common discontinuous clay films; friable; numerous fine roots; clear smooth boundary.
12554	inches	

R22	18 to 25	Yellowish brown (10YR5/6) silty clay loam with common medium distinct variegations of yellowish red (5YR5/6); moderate medium subangular blocky structure; common discontinuous clay films.
12555	inches	

**SOIL SURVEY LABORATORY**  
Lincoln, Nebraska

LOCATION Hardin County, Tennessee

SOIL TYPE Wolftever silt loam

LAB NOS. 12375 - 12381

SOIL NOS. S59Tenn-36-9

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1Bla						PARTICLE SIZE DISTRIBUTION (in mm.) (per cent)			3A1			TEXTURAL CLASS
			VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY <0.002	INTERNATIONAL		II 0.2-0.02	III 0.02-0.002	> 2	
										II	III				
12375	0-6	Ap	0.6a	1.4a	0.8a	1.5b	3.1c	63.3	29.3	16.9	50.4	-	sic1		
12376	6-12	B1	0.8a	1.6a	0.9a	2.3b	5.1c	50.7	38.6	19.1	38.3	Tr.	sic1		
12377	12-21	B21	0.1a	0.5a	0.5a	3.3c	8.6e	46.2	40.8	25.5	31.9	-	sic		
12378	21-27	B22	<0.1	0.2a	0.3a	3.9c	11.8c	46.9	36.9	33.5	28.4	-	sic1		
12379	27-44	B23	<0.1	0.1c	0.2c	2.3c	11.5	54.4	31.5	38.0	29.9	-	sic1		
12380	44-55	B3	<0.1	<0.1	0.2d	1.4d	6.0	59.3	33.1	27.5	38.8	-	sic1		
12381	55-81	C	<0.1	0.1d	0.4d	4.0d	6.5	55.9	33.1	27.1	38.1	-	sic1		
pH			ORGANIC MATTER			6C1a			BULK DENSITY			4B2			
			8C1a $H_2O$ 1:1			6A1a ORGANIC CARBON %	6B1a NITROGEN %	C/N Fe <sub>2</sub> O <sub>3</sub> %	Field Iron es 4B4 Water	State 4Ala 4B3 Water	30-Cm. 4Alc Water	0.D. 4Alb Water	15-Bar Water		
12375	5.6				1.49	0.126	11	3.2	21.7	1.33	27.4	1.31	1.39	12.5	
12376	5.0				0.44	0.057	8	3.4	22.1	1.49	24.7	1.48	1.55	16.3	
12377	4.9				0.20	0.039		3.5	21.8	1.51	24.4	1.50	1.59	17.2	
12378	4.9				0.15	0.040		3.5	20.8	1.59	23.0	1.57	1.64	15.9	
12379	4.8				0.09			3.3	19.9	1.63	22.4	1.61	1.68	13.8	
12380	4.8				0.10			3.5	22.9	1.57	23.8	1.56	1.63	14.5	
12381	4.9				0.12			3.0	19.5	1.65	22.0	1.62	1.69	13.7	
5A1a CATION EXCHANGE CAPACITY $NH_4OAc$			EXTRACTABLE CATIONS 5Bla						5C1 Base Sat.% $NH_4OAc$	5C3 Base Sat.% on Sum Cations	5B1a Sum Ext. Cations me/100g	5A3a Sum Ext. Cations me/100g	8D3 Ca/Mg		
			6N2b Ca	602b Mg	6H1a Na	6P2a K	6G2a H	milliequivalents per 100g soil							
12375	14.7	8.0	0.8	<0.1	0.2	12.0	61	43	9.0	21.0					
12376	13.2	3.6	0.5	<0.1	0.2	14.5	32	23	4.3	18.8					
12377	13.4	2.0	0.3	<0.1	0.2	15.0	19	14	2.5	17.5					
12378	11.8	1.9	0.4	<0.1	0.2	14.2	21	15	2.5	16.7					
12379	11.1	0.8	0.7	0.1	0.2	13.7	16	12	1.8	15.5					
12380	11.9	0.8	1.0	<0.1	0.2	14.2	17	12	2.0	16.2					
12381	12.7	1.4	2.0	<0.1	0.2	14.0	28	20	3.6	17.6	0.7				

a. Many Fe-Mn? bearing aggregates.  
b. Common Fe-Mn? bearing aggregates.

c. Few Fe-Mn? bearing aggregates.  
d. Trace mica fragments.

Soil type: Wolftever silt loam

Soil No.: 859Tenn-36-5

Location: Hardin County, Tennessee, four miles southwest of Savannah, on C. S. Roberts farm, 1/2 mile west of Mud Creek on Diamond Island Road.  
Photo AIK-7F-94(1955)

Vegetation and Use: Johnson grass, sericea lespedeza, and weeds (Soil Bank).

Slope and Land Form: Nearly level to gently sloping low stream terraces.  
Elevation 382 feet.

Drainage and Permeability: Moderately well drained; Runoff is medium to slow,  
internal drainage moderately slow. Permeability moderately slow.

from a variety of rocks, including igneous rocks, shales, sandstones and limestones.

Samples collected by: Edwood Pedersen, T. R. Love, W. H. Proffitt, George Phibbs, Bobby Hinton, E. T. Lamplay - October 21, 1959.

Profile described by: W. H. Proffitt and T. R. Love - October 21, 1959.

#### Horizon and

Lincoln

Lab. No.

Ap

12344

0 to 7

inches

Dark grayish brown (10YR4/2) to dark brown (10YR3/3) fine silt loam to silty clay loam; moderately medium granular structure; friable; common small roots; few concretions 1 to 5 mm in diameter; abrupt smooth boundary.

B1

12345

7 to 15

inches

Yellowish brown (10YR5/4) to dark yellowish brown (10YR4/4) with an intermixture of dark grayish brown (10YR4/2) silty clay loam; moderate very fine subangular blocky structure; common small concretions 1.0 to 5.0 mm in diameter; few small roots; clear smooth boundary.

B21

12346

15 to 22

inches

Yellowish brown (10YR5/4) silty clay or silty clay loam; strong fine angular blocky structure; firm; patchy clay films; common black stains; common small concretions and segregations; clear smooth boundary.

B22

12347

22 to 31

inches

Yellowish brown (10YR5/4) silty clay loam; few fine faint light brownish areas (10YR6/2) to (10YR6/3), pale brown (10YR6/2) and

SOIL SURVEY LABORATORY  
Lincoln, Nebraska

LOCATION Hardin County, Tennessee

SOIL TYPE Wolftever silt loam

LAB NOS. 12375 - 12381

SOIL NOS. S59Tenn-36-9

LABORATORY NUMBER	DEPTH INCHES	HORIZON	1Bla		PARTICLE SIZE DISTRIBUTION (in mm.)				(per cent) 3A1			2A2 > 2	TEXTURAL CLASS		
			VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0.10	VERY FINE SAND 0.10-0.05	SILT 0.05-0.002	CLAY < 0.002	INTERNATIONAL	II	III			
											0.2-0.02	0.02-0.002			
12375	0-6	Ap	0.6a	1.4a	0.8a	1.5b	3.1c	63.3	29.3	16.9	50.4	-	sicl		
12376	6-12	B1	0.8a	1.6a	0.9a	2.3b	5.1c	50.7	38.6	19.1	38.3	Tr.	sicl		
12377	12-21	B21	0.1a	0.5a	0.5a	3.3c	8.6c	46.2	40.8	25.5	31.9	-	sic		
12378	21-27	B22	<0.1	0.2a	0.3a	3.9c	11.8c	46.9	36.9	33.5	28.4	-	sicl		
12379	27-44	B23	<0.1	0.1c	0.2c	2.3c	11.5	54.4	31.5	38.0	29.9	-	sicl		
12380	44-55	B3	<0.1	<0.1	0.2d	1.4d	6.0	59.3	33.1	27.5	38.8	-	sicl		
12381	55-81	C	<0.1	0.1d	0.4d	4.0d	6.5	55.9	33.1	27.1	38.1	-	sicl		
pH			ORGANIC MATTER				6Cla	BULK DENSITY						4B2	
			8Cla $H_2O$ 1:1		6Ala ORGANIC CARBON %	6Bla NITROGEN %	C/N	Free Iron as $Fe_2O_3$ %	Field 4B4 Water	State 4Ala Water	30-Cm. 4B3 Water	O.D. 4Alc g/cc.	4Alh g/cc.	15-Bar Water %	
12375	5.6				1.49	0.126	11	3.2	21.7	1.33	27.4	1.31	1.39	12.5	
12376	5.0				0.44	0.057	8	3.4	22.1	1.49	24.7	1.48	1.55	16.3	
12377	4.9				0.20	0.039		3.5	21.8	1.51	24.4	1.50	1.59	17.2	
12378	4.9				0.15	0.040		3.5	20.8	1.59	23.0	1.57	1.64	15.9	
12379	4.8				0.09			3.3	19.9	1.63	22.4	1.61	1.68	13.8	
12380	4.8				0.10			3.5	22.9	1.57	23.8	1.56	1.63	14.5	
12381	4.9				0.12			3.0	19.5	1.65	22.0	1.62	1.69	13.7	
5Ala EXCHANGE CAPACITY $NH_4OAc$			EXTRACTABLE CATIONS 5Bla				5Cl	5C3	5Bla	5A3a	5A3a	8D3			
			6N2b Ca	602b Mg	6H1a Na	6P2a K	6Q2a H	Base Sat.% $NH_4OAc$	Base Sat.%	Sum on Sum Cations	Ext. Bases Cations me/100g	Ext. Bases Cations me/100g	Ca/Mg		
12375	14.7	8.0	0.8	<0.1	0.2	12.0	61	43	9.0	21.0					
12376	13.2	3.6	0.5	<0.1	0.2	14.5	32	23	4.3	18.8					
12377	13.4	2.0	0.3	<0.1	0.2	15.0	19	14	2.5	17.5					
12378	11.8	1.9	0.4	<0.1	0.2	14.2	21	15	2.5	16.7					
12379	11.1	0.8	0.7	0.1	0.2	13.7	16	12	1.8	15.5					
12380	11.9	0.8	1.0	<0.1	0.2	14.2	17	12	2.0	16.2					
12381	12.7	1.4	2.0	<0.1	0.2	14.0	28	20	3.6	17.6	0.7				

- a. Many Fe-Mn? bearing aggregates.  
b. Common Fe-Mn? bearing aggregates.

- c. Few Fe-Mn? bearing aggregates.  
d. Trace mica fragments.

Soil type: Wolftever silt loam

Soil Nos. : S59Tenn-36-9

Location: Hardin County, Tennessee, 6.5 miles southwest of Savannah on Pittsburg Ferry Road and 1 mile east of Tennessee River on gravel road on Gene Whitten farm. Photo AIK-7F-96(1955).

Vegetation and Use: Cropland - corn.

Slope and Land Form: Gently sloping (2-3 percent) low terrace. Elevation 384 feet.

Drainage and Permeability: Moderately well drained. Runoff is medium; internal drainage moderately slow. Permeability moderately slow.

Parent Material: General alluvium washed from upland soils derived from a variety of rocks including igneous rocks, shales, sandstone and limestone.

Samples collected by: C. B. Breinig, Edwood Pedersen, George Phibbs, T. R. Love, W. H. Proffitt, Bobby Hinton, E. T. Lampley, E. C. Sease. October 22, 1959.

Profile described by: W. H. Proffitt, E. C. Sease. October 22, 1959.

**Horizon and**

**Lincoln**

**Lab. No. Depth**

Ap 12375 0 to 6 inches Dark grayish brown (10YR 4/2) silt loam; weak fine crumb structure; very friable; common fine roots; few fine pores; few small rounded hard concretions; abrupt smooth boundary.

B1 12376 6 to 12 inches Yellowish brown (10YR 5/4) light silty clay loam; weak fine subangular blocky structure; friable; some peds coated with dark yellowish brown (10YR 4/4); common black round hard concretions; clear smooth boundary.

B21 12377 12 to 21 inches Yellowish brown (10YR 5/4) or dark yellowish brown (10YR 4/4) silty clay loam; weak fine subangular blocky structure; friable; patchy thin clay films; few to common round hard black concretions (1-2 mm. in diameter); clear smooth boundary.

B22 12378 21 to 27 inches Yellowish brown (10YR 5/4-5/6) to dark brown (7.5YR 4/4) silty clay loam; with common dark yellowish brown (10YR 4/4) mottles; weak fine subangular blocky structure; friable; few patchy clay films; some peds coated with pale brown (10YR 6/3) silt; few small dark concretions or segregations; clear wavy boundary.

B23 12379 27 to 44 inches Dark brown (7.5YR 4/4) to dark yellowish brown (10YR 4/4) silty clay loam; many medium faint mottles of light brownish gray (10YR 6/2), pale brown (10YR 6/3); yellowish brown (10YR 5/4-5/6) weak fine and medium subangular blocky structure; firm; few patchy clay films; common black stains on peds; some peds coated with light brownish gray (10YR 6/2) silt; few small soft black concretions; gradual wavy boundary.

B3 12380 44 to 55 inches Yellowish brown to dark yellowish brown (10YR 5/4-4/4) silty clay loam; many medium faint mottles of pale brown (10YR 6/3), dark brown (7.5YR 4/4), and light brownish gray (10YR 6/2); weak medium angular blocky structure; firm; few patchy clay films; few peds coated with grayish brown (10YR 5/2) silt; common black stains on ped faces; few small black concretions; clear wavy boundary.

C 12381 55 to 81 inches Dark yellowish brown (10YR 4/4) silty clay loam; common, medium, faint pale brown (10YR 6/3), light brownish gray (10YR 6/2) and strong brown (7.5YR 5/6); weak medium angular and subangular blocky structures to moderate. Some fine sand.